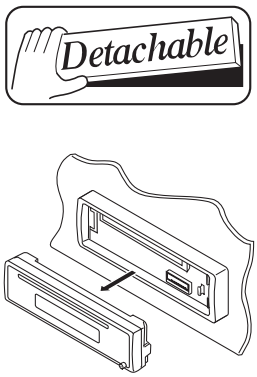
JVC

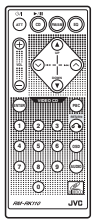
SERVICE MANUAL

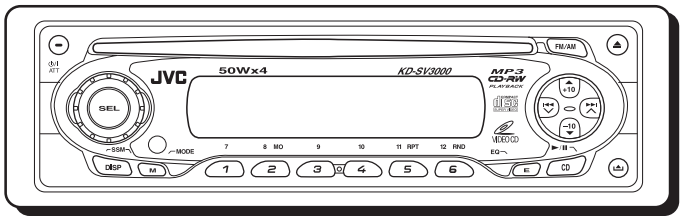
VCD/CD RECEIVER

KD-SV3000

Area Suffix
U ---------- Other Areas







COMPACT disc DIGITAL VIDEO

MP3 CD-RW PLAYBACK

VIDEO CD

TABLE OF CONTENTS

1 **Precautions** 1-3
2 **Disassembly method** 1-5
3 **Adjustment** 1-24
4 **Description of major ICs** 1-27

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No.49837
2003/6

SPECIFICATION

AUDIO AMPLIFIER SECTION	Maximum Power Output	Front	50 W per channel
		Rear	50 W per channel
	Continuous Power Output (RMS):	Front	19 W per channel into 4 Ω 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion.
		Rear	19 W per channel into 4 Ω 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion.
	Load Impedance		4 Ω (4 Ω to 8 Ω allowance)
	Tone Control Rang	Bass	±10 dB at 100 Hz
		Treble	±10 dB at 10 kHz
	Frequency Response		40 Hz to 20 000 Hz
	Signal-to-Noise Ratio		70 dB
	Line-Out Level/Impedance		2.0 V/20 kΩ load (full scale)
	Output Impedance		1 kΩ
VIDEO SECTION	Color system		PAL/NTSC
	Video output (composite)		1Vp-p/75Ω
TUNER SECTION	Frequency Range	FM	87.5 MHz to 108 MHz
		AM	531 kHz to 1 602 kHz
	[FM Tuner]	Usable Sensitivity	11.3 dBf (1.0 μV/75 Ω)
		50 dB Quieting Sensitivity	16.3 dBf (1.8 μV/75 Ω)
		Alternate Channel Selectivity (400 kHz)	65 dB
		Frequency Response	40 Hz to 15 000 Hz
		Stereo Separation	35 dB
		Capture Ratio	1.5 dB
	[AM Tuner]	Sensitivity	20 μV
		Selectivity	35 dB
CD PLAYER SECTION	Type		Compact disc player
	Signal Detection System		Non-contact optical pickup (semiconductor laser)
	Number of channels		2 channels (stereo)
	Frequency Response		5 Hz to 20 000 Hz
	Dynamic Range		88 dB
	Signal-to-Noise Ratio		90 dB
	Wow and Flutter		Less than measurable limit
	MP3 decoding format		MPEG1 Audio Layer 3
	Max. Bit Rate		320 Kbps
GENERAL	Power Requirement		Operating Voltage: DC 14.4 V (11 V to 16 V allowance)
	Grounding System		Negative ground
	Allowable Operating Temperature		0ºC to +40ºC
	Dimensions (W × H × D)	Installation Size (approx.)	182 mm × 52 mm × 150 mm
		Panel Size (approx.)	188 mm × 58 mm × 11 mm
	Mass (approx.)		1.3 kg (excluding accessories)

Design and specifications are subject to change without notice.

SECTION 1
Precautions

1.1 Safety Precautions

> ⚠ ***CAUTION*** **Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.**

> ⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

1.2 Preventing static electricity

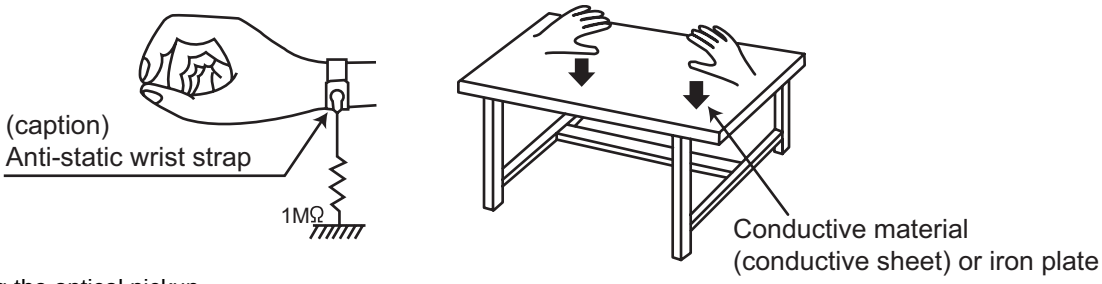
Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

1.2.1 Grounding to prevent damage by static electricity

Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players.
Be careful to use proper grounding in the area where repairs are being performed.

(1) Ground the workbench
Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

(2) Ground yourself
Use an anti-static wrist strap to release any static electricity built up in your body.



(3) Handling the optical pickup
- In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)
- Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

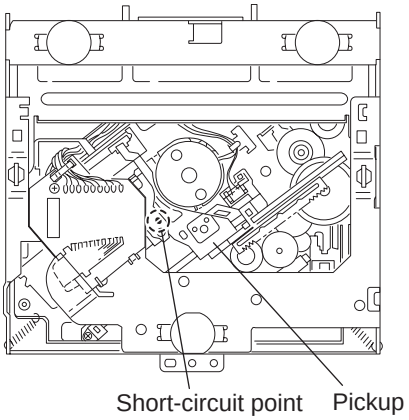
1.3 Handling the traverse unit (optical pickup)

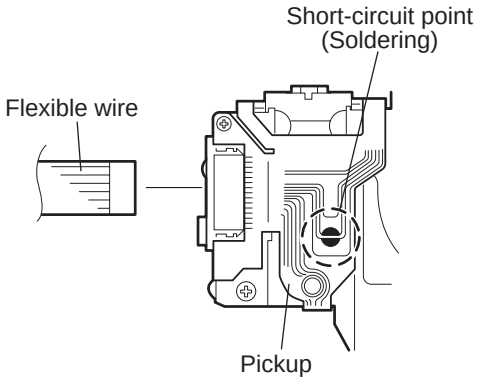
(1) Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
(2) Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.
(3) Handle the flexible cable carefully as it may break when subjected to strong force.
(4) It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

1.4 Attention when traverse unit is decomposed

***Please refer to "Disassembly method" in the text for the CD pickup unit.**

- Apply solder to the short land before the flexible wire is disconnected from the connector on the CD pickup unit. (If the flexible wire is disconnected without applying solder, the CD pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short land after connecting the flexible wire.





SECTION 2
Disassembly method

2.1 Main body

2.1.1 Removing the front panel assembly (See Fig.1)

(1) Push the release button in the lower right part of the front panel assembly and remove the front panel assembly.

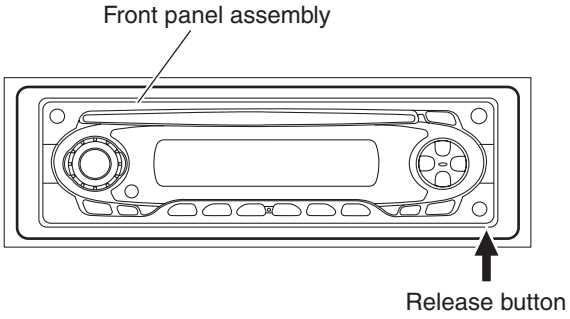


Fig.1

2.1.2 Removing the bottom cover (See Fig.2)

(1) Turn the main body up side down.

(2) Insert a screwdriver under the joints to release the two joints **a** on the left side, two joints **b** on the right side and joint **c** on the back side of the main body, then remove the bottom cover from the main body.

CAUTION:

When releasing the joints using a screwdriver, do not damage the main board.

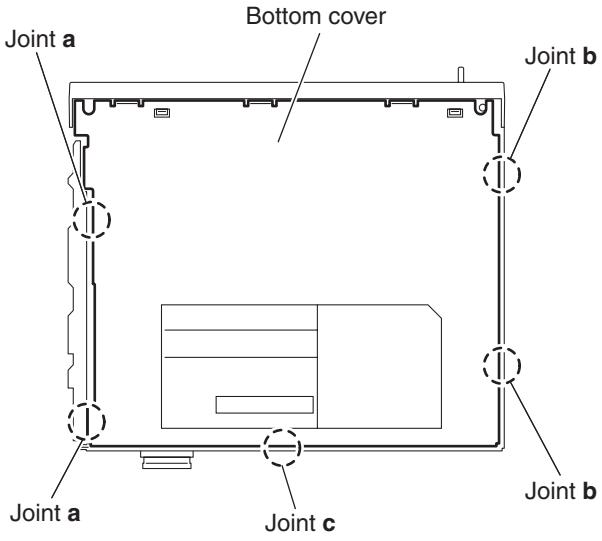


Fig.2

2.1.3 Removing the front chassis assembly (See Fig.3)

- Prior to performing the following procedures, remove the front panel assembly and bottom cover.

(1) Remove the screw **A** on the both sides of the main body.

(2) Release the two joints **d** and two joints **e** on the both sides of the main body, then remove the front chassis assembly toward the front.

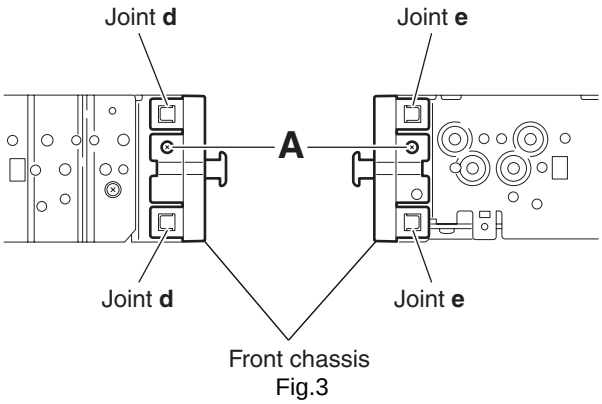


Fig.3

2.1.4 Removing the heat sink (See Fig.4)

- Prior to performing the following procedure, remove the front panel assembly as required.
  (1) Remove the two screws **B** and two screws **C** attaching the heat sink on the left side of the main body, and remove the heat sink.

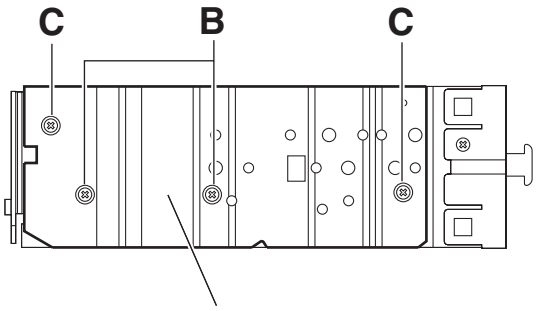


Fig.4

2.1.5 Removing the rear bracket (See Fig.5)

- Prior to performing the following procedure, remove the bottom cover.
  (1) Remove the three screws **D**, screw **E** and six screws **F** attaching the rear bracket on the back side of the main body.
  (2) Remove the rear bracket.

Reference:

During reassembly, before fixing the rear bracket onto the main body, insert the video out cable into the slot.

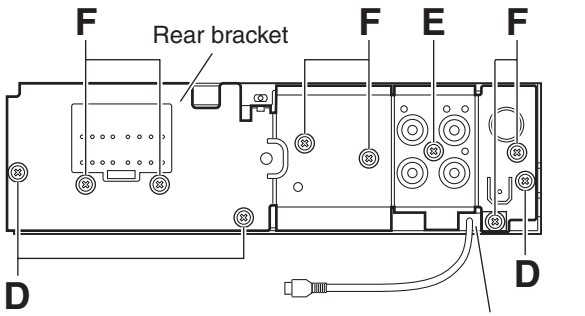


Fig.5

2.1.6 Removing the main board (See Fig.6)

- Prior to performing the following procedure, remove the front panel assembly, front chassis assembly, heat sink, bottom cover and rear bracket.
  (1) Remove the two screws **G** attaching the main board.
  (2) Disconnect the connector CN501 and remove the main board.

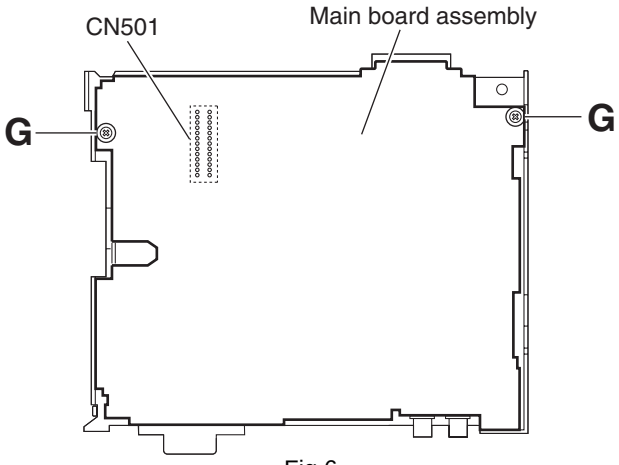


Fig.6

2.1.7 Removing the VCD/CD mechanism board (See Fig. 7)

- Prior to performing the following procedure, remove the front panel assembly, front chassis assembly, heat sink, bottom cover, rear bracket and main board.
  (1) Remove the five screws **H** attaching the VCD/CD mechanism board.
  (2) Disconnect the card wire from the connector CN601 on the VCD/CD mechanism board.
  (3) Move the VCD/CD mechanism board in the direction of the arrow to release it from the joint **f**.

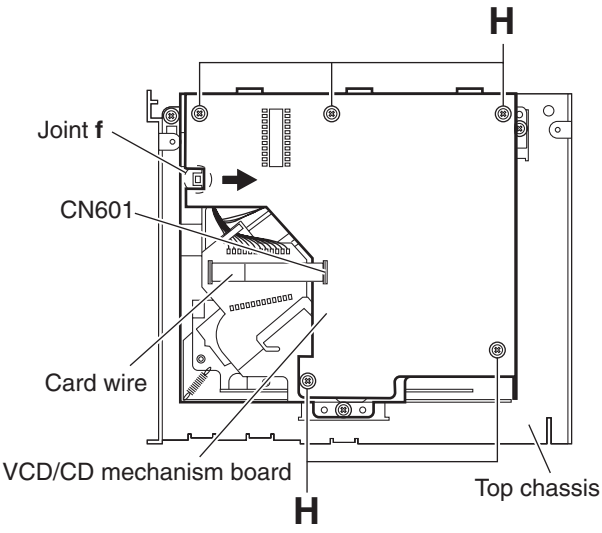


Fig.7

2.1.8 Removing the CD mechanism assembly (See Fig. 8)

- Prior to performing the following procedure, remove the front panel assembly, front chassis assembly, heat sink, bottom cover, rear bracket, main board and VCD/CD mechanism board.
  (1) Remove the three screws **J** attaching the top chassis.
  (2) Take out the CD mechanism assembly.

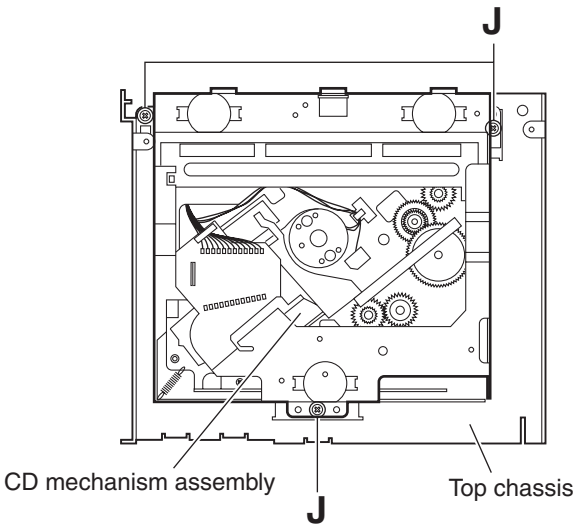


Fig.8

2.1.9 Removing the front board (See Figs.9 to 11)

- Prior to performing the following procedure, remove the front panel assembly.
  (1) Remove the four screws **K** on the back side of the front panel assembly. (See Fig.9.)
  (2) Release the thirteen joints **g**. (See Fig.10.)
  (3) Release the joint **h** and take out the front board. (See Fig.11.)

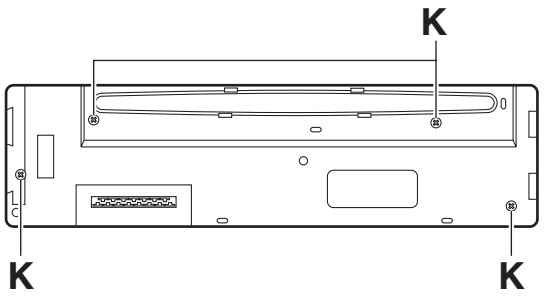


Fig.9

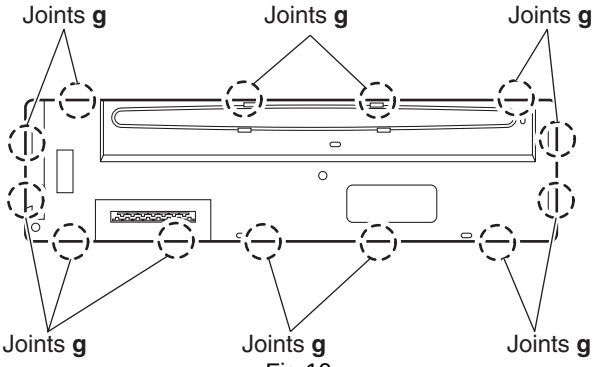


Fig.10

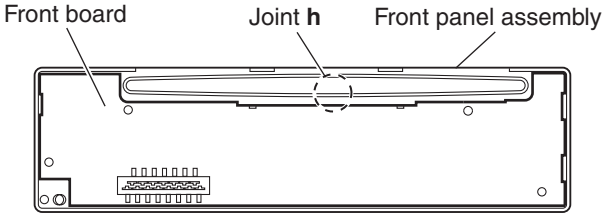


Fig.11

2.2 CD Mechanism section

2.2.1 Removing the top cover (See Figs.1 and 2)

(1) Remove the four screws **A** on the both side of the body.
(2) Lift the front side of the top cover and move the top cover backward to release the two joints **a**.

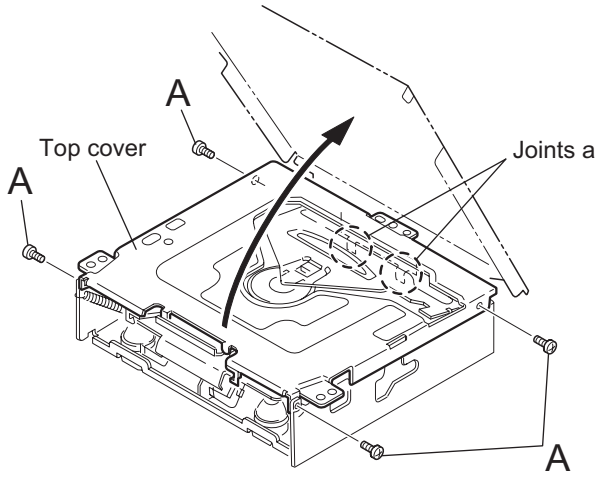


Fig.1

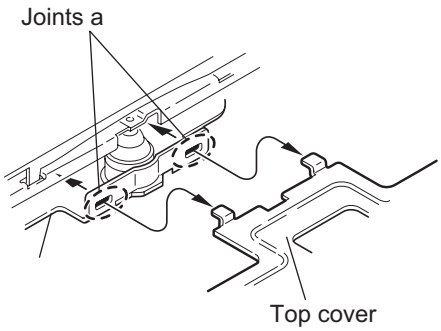


Fig.2

2.2.2 Removing the connector board (See Figs.3 to 5)

CAUTION:

Before disconnecting the flexible wire from the pickup, solder the short-circuit point on the pickup. No observance of this instruction may cause damage of the pickup.

(1) Remove the screw **B** fixing the connector board.
(2) Solder the short-circuit point on the pickup.
(3) Disconnect the flexible wire from the pickup.
(4) Move the connector board in the direction of the arrow to release the two joints **b**.
(5) Unsolder the wires on the connector board if necessary.

CAUTION:

Unsolder the short-circuit point after reassembling.

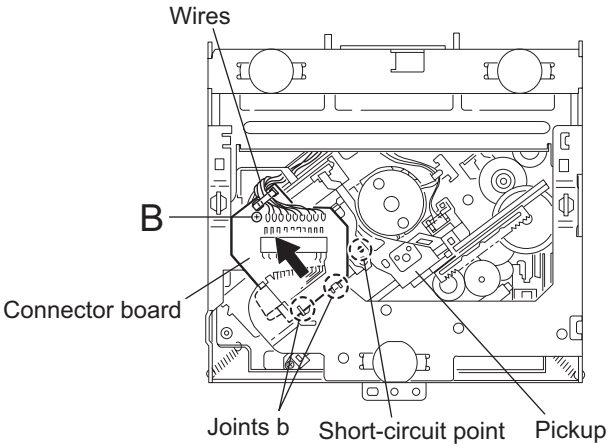


Fig.3

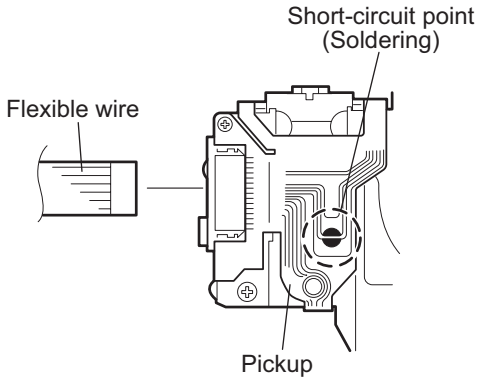


Fig.4

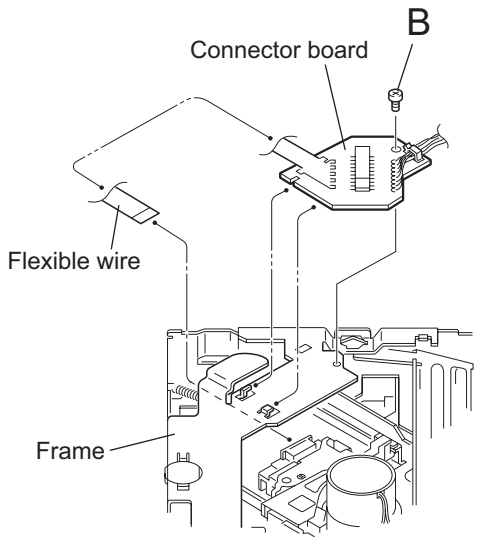


Fig.5

2.2.3 Removing the DET switch (See Figs.6 and 7)

(1) Extend the two tabs **c** of the feed sw. holder and pull out the switch.
(2) Unsolder the DET switch wire if necessary.

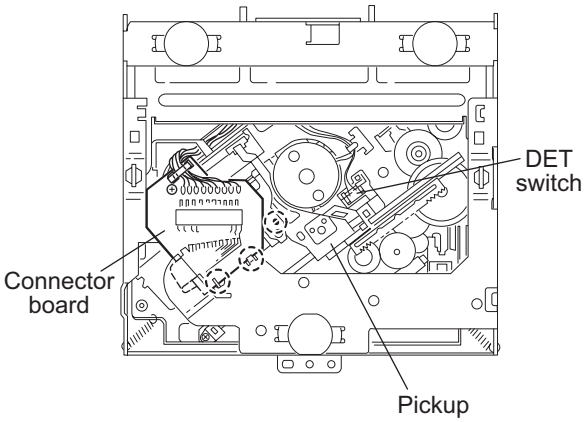


Fig.6

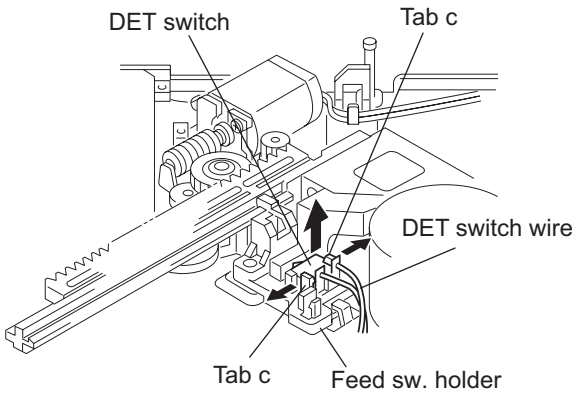


Fig.7

2.2.4 Removing the chassis unit (See Figs.8 and 9)

- Prior to performing the following procedure, remove the top cover and connector board.
  (1) Remove the two suspension springs (L) and (R) attaching the chassis unit to the frame.

CAUTION:

- The shape of the suspension spring (L) and (R) are different. Handle them with care.
- When reassembling, make sure that the three shafts on the underside of the chassis unit are inserted to the dampers certainly.

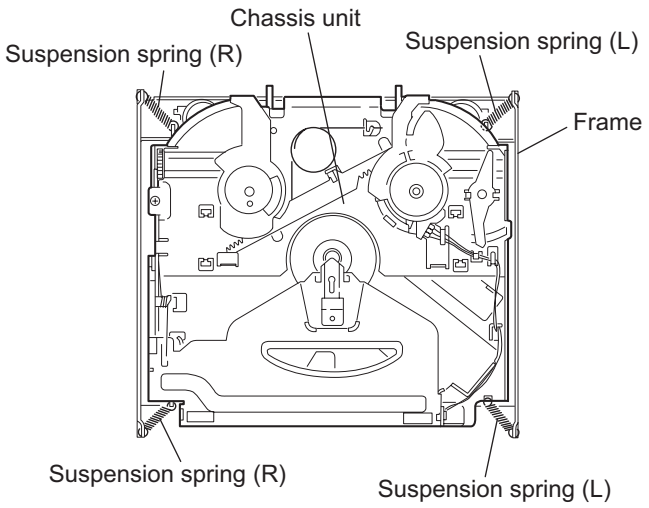


Fig.8

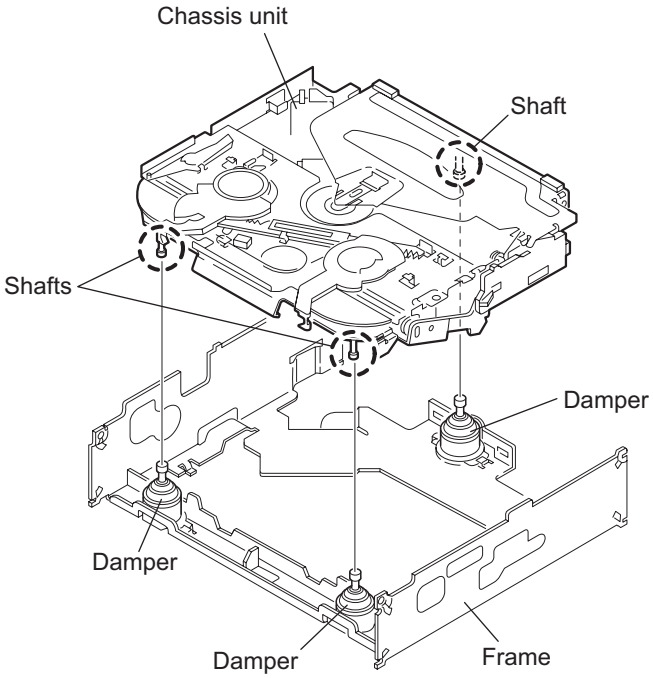


Fig.9

2.2.5 Removing the clamper assembly (See Figs.10 and 11)

- Prior to performing the following procedure, remove the top cover.
  (1) Remove the clamper arm spring.
  (2) Move the clamper assembly in the direction of the arrow to release the two joints **d**.

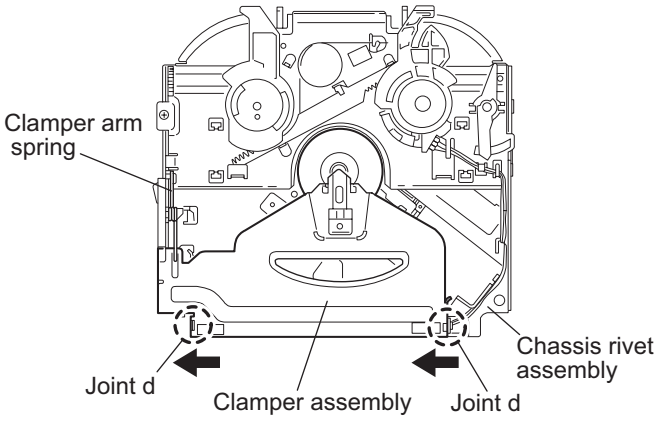


Fig.10

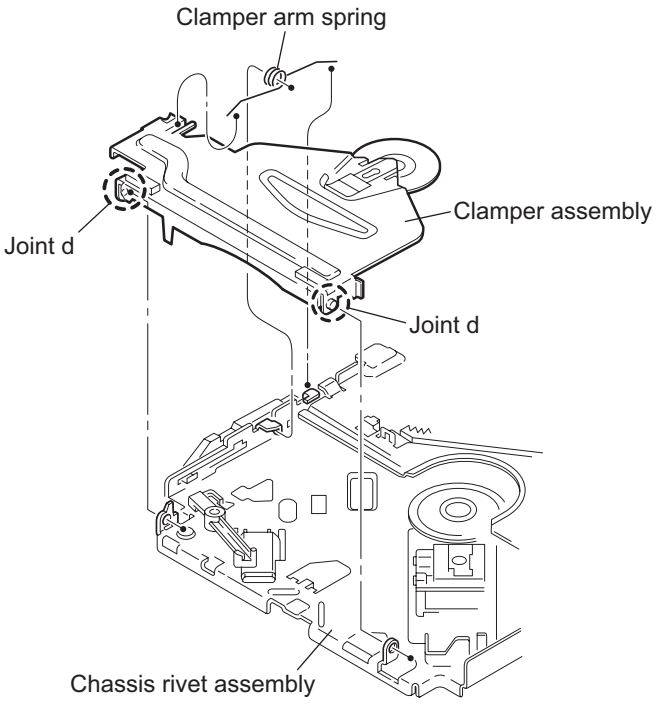


Fig.11

2.2.6 Removing the loading / feed motor assembly (See Figs.12 and 13)

- Prior to performing the following procedure, remove the top cover, connector board and chassis unit.
  (1) Remove the screw **C** and move the loading / feed motor assembly in the direction of the arrow to remove it from the chassis rivet assembly.
  (2) Disconnect the wire from the loading / feed motor assembly if necessary.

CAUTION:

When reassembling, connect the wire from the loading / feed motor assembly to the flame as shown in Fig.12.

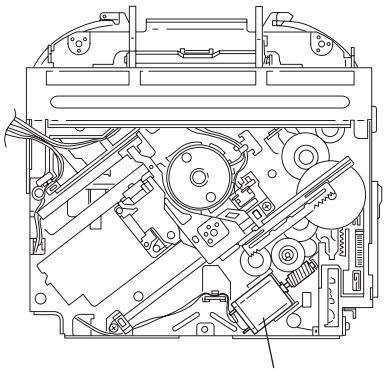


Fig.12

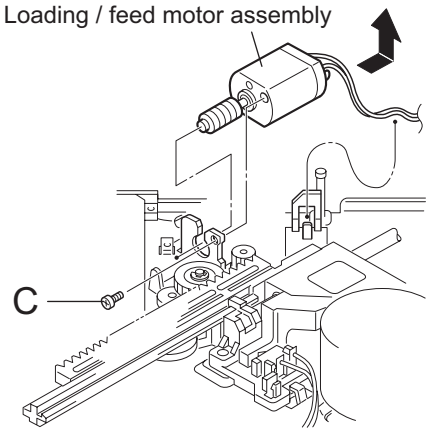


Fig.13

2.2.7 Removing the pickup unit (See Figs.14 to 18)

- Prior to performing the following procedure, remove the top cover, connector board and chassis unit.
  (1) Remove the screw **D** and pull out the pu. shaft holder from the pu. shaft.
  (2) Remove the screw **E** attaching the feed sw. holder.
  (3) Move the part **e** of the pickup unit upward with the pu. shaft and the feed sw. holder, then release the joint **f** of the feed sw. holder in the direction of the arrow. The joint **g** of the pickup unit and the feed rack is released, and the feed sw. holder comes off.
  (4) Remove the pu. shaft from the pickup unit.
  (5) Remove the screw **F** attaching the feed rack to the pickup unit.

2.2.8 Reattaching the pickup unit (See Figs.14 to 17)

(1) Reattach the feed rack to the pickup unit using the screw **F**.
(2) Reattach the feed sw. holder to the feed rack while setting the joint **g** to the slot of the feed rack and setting the joint **f** of the feed rack to the switch of the feed sw. holder correctly.
(3) As the feed sw. holder is temporarily attached to the pickup unit, set to the gear of the joint **g** and to the bending part of the chassis (joint **h**) at a time.

CAUTION:

Make sure that the part i on the underside of the feed rack is certainly inserted to the slot j of the change lock lever.

(4) Reattach the feed sw. holder using the screw **E**.
(5) Reattach the pu. shaft to the pickup unit. Reattach the pu. shaft holder to the pu. shaft using the screw **D**.

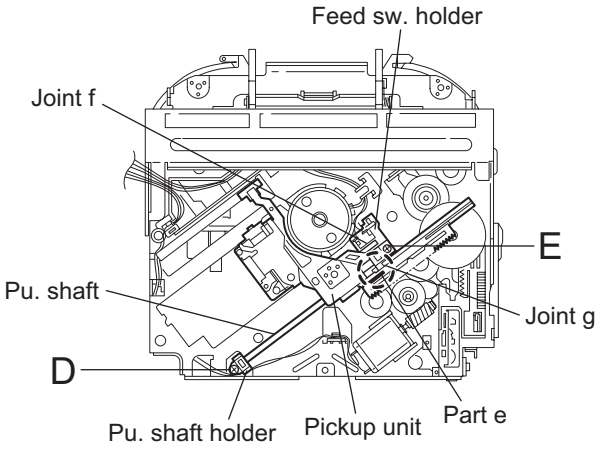


Fig.14

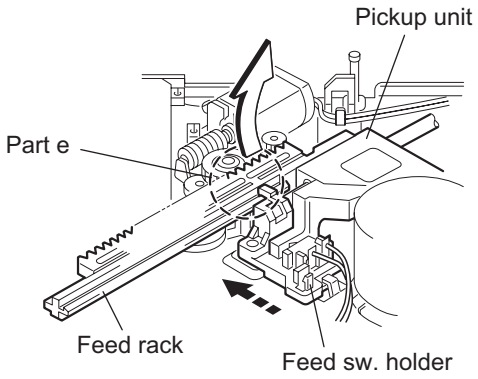


Fig.15

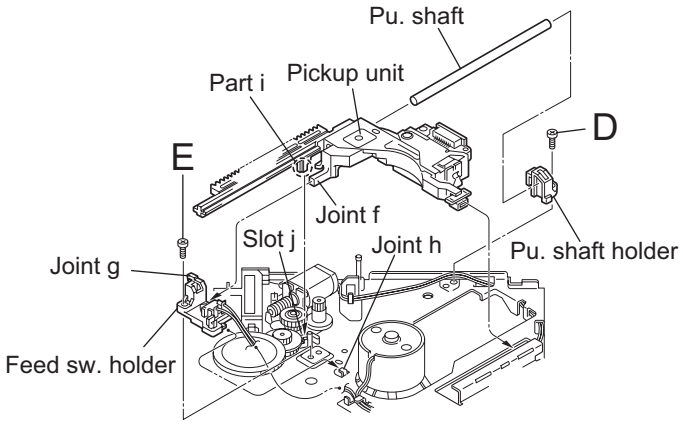


Fig.16

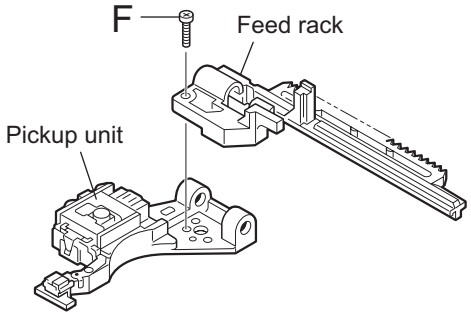


Fig.17

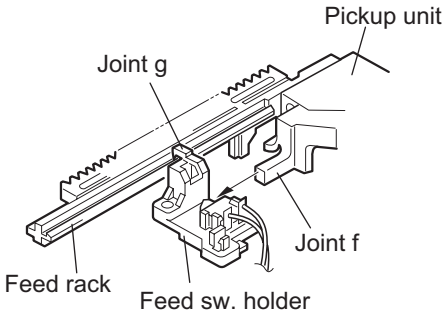


Fig.18

2.2.9 Removing the trigger arm (See Figs.19 and 20)

- Prior to performing the following procedure, remove the top cover, connector board and clamper unit.
  (1) Turn the trigger arm in the direction of the arrow to release the joint **k** and pull out upward.

CAUTION:

When reassembling, insert the part m and n of the trigger arm into the part p and q at the slot of the chassis rivet assembly respectively and join the joint **k** at a time.

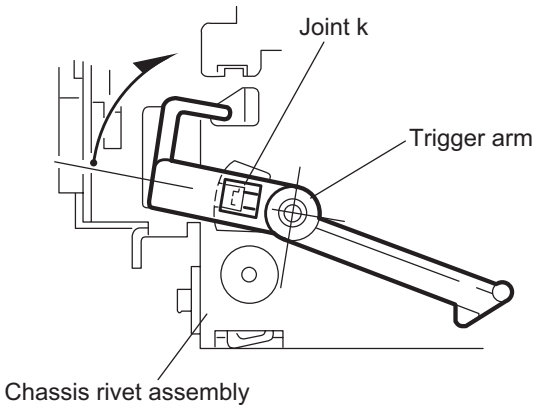


Fig.19

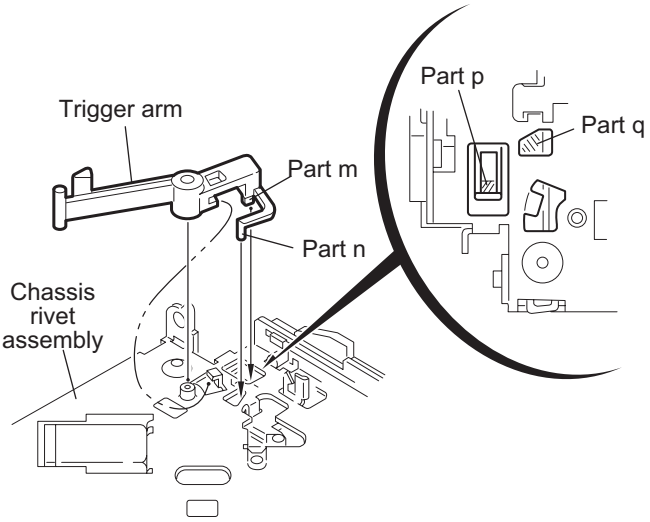


Fig.20

2.2.10 Removing the top plate assembly (See Fig.21)

- Prior to performing the following procedure, remove the top cover, connector board, chassis unit, and clamper assembly.
  (1) Remove the screw **H**.
  (2) Move the top plate assembly in the direction of the arrow to release the two joints **r**.
  (3) Unsolder the wire marked s if necessary.

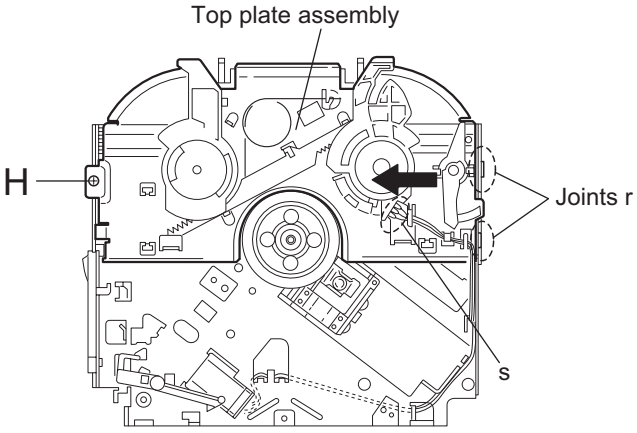


Fig.21

2.2.11 Removing the mode sw. / select lock arm (See Figs.22 and 23)

- Prior to performing the following procedure, remove the top plate assembly.
  (1) Bring up the mode sw. to release from the link plate (joint **t**) and turn in the direction of the arrow to release the joint **u**.
  (2) Unsolder the wire of the mode sw. marked s if necessary.
  (3) Turn the select lock arm in the direction of the arrow to release the two joints **v**.
  (4) The select lock arm spring comes off the select lock arm at the same time.

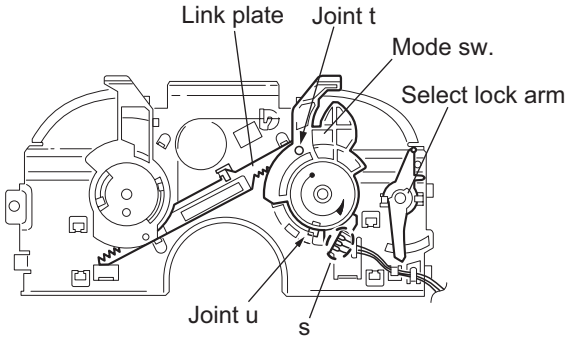


Fig.22

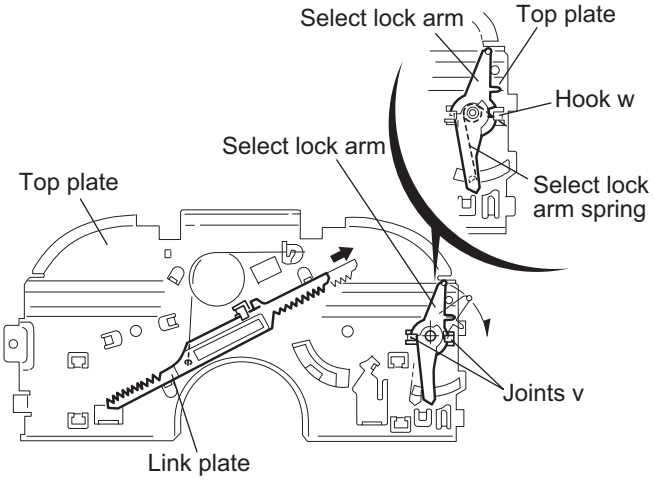


Fig.23

2.2.12 Reassembling the mode sw. / select lock arm (See Figs.24 to 26)

REFERENCE:

Reverse the above removing procedure.

(1) Reattach the select lock arm spring to the top plate and set the shorter end of the select lock arm spring to the hook w on the top plate.

(2) Set the other longer end of the select lock arm spring to the boss x on the underside of the select lock arm, and join the select lock arm to the slots (joint **v**). Turn the select lock arm as shown in the figure.

(3) Reattach the mode sw. while setting the part t to the first peak of the link plate gear, and join the joint **u**.

CAUTION:

When reattaching the mode sw., check if the points y and z are correctly fitted and if each part operates properly.

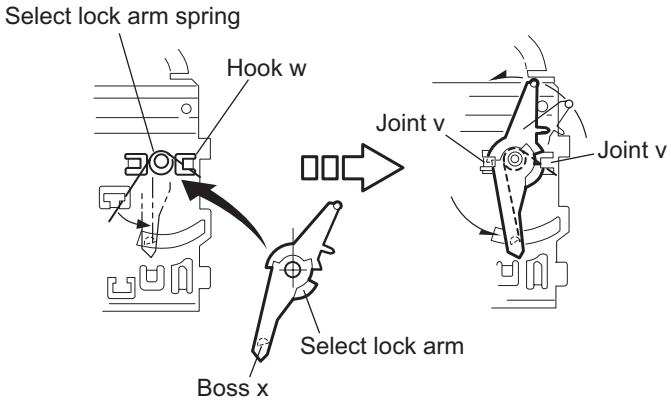


Fig.24

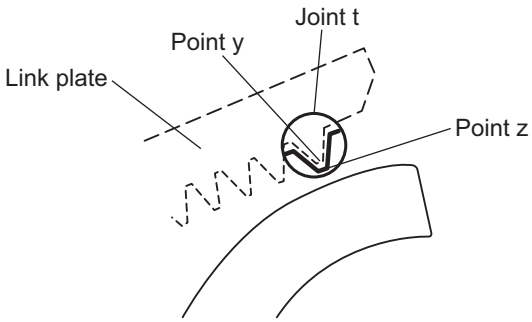


Fig.25

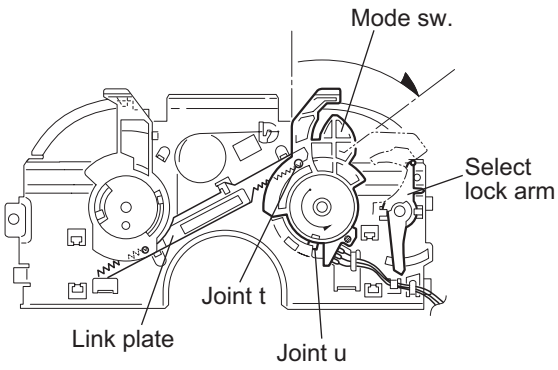


Fig.26

2.2.13 Removing the select arm R / link plate (See Figs.27 and 28)

- Prior to performing the following procedure, remove the top plate assembly.
  (1) Bring up the select arm R to release from the link plate (joint a') and turn as shown in the figure to release the two joints **b'** and joint **c'**.
  (2) Move the link plate in the direction of the arrow to release the joint **d'**. Remove the link plate spring at the same time.

REFERENCE:

Before removing the link plate, remove the mode sw..

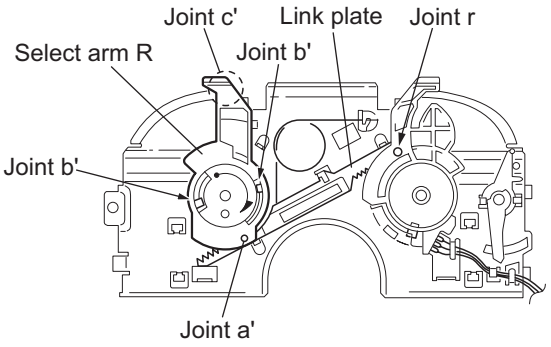


Fig.27

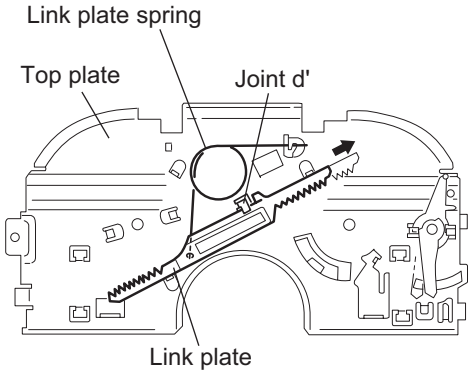


Fig.28

2.2.14 Reattaching the Select arm R / link plate (See Figs.29 and 30)

REFERENCE:

Reverse the above removing procedure.

(1) Reattach the link plate spring.
(2) Reattach the link plate to the link plate spring while joining them at joint **d'**.
(3) Reattach the joint **a'** of the select arm R to the first peak of the link plate while joining the two joints **b'** with the slots. Then turn the select arm R as shown in the figure. The top plate is joined to the joint **c'**.

CAUTION:

When reattaching the select arm R, check if the points **e'** and **f'** are correctly fitted and if each part operates properly.

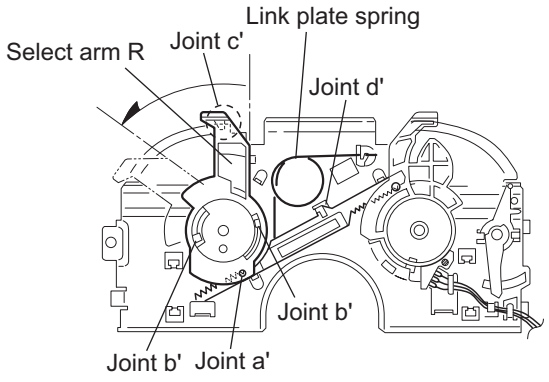


Fig.29

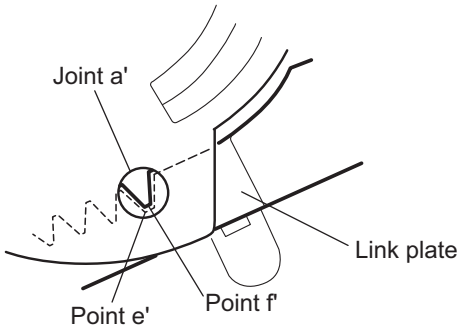


Fig.30

2.2.15 Removing the loading roller assembly (See Figs.31 to 33)

- Prior to performing the following procedure, remove the clamper assembly and top plate assembly.

(1) Push inward the loading roller assembly on the gear side and detach it upward from the slot of the joint **g'** of the lock arm rivet assembly.

(2) Detach the loading roller assembly from the slot of the joint **h'** of the lock arm rivet assembly.

The roller guide comes off the gear section of the loading roller assembly.

Remove the roller guide and the HL washer from the shaft of the loading roller assembly.

(3) Remove the screw **J** attaching the lock arm rivet assembly.

(4) Push the shaft at the joint **i'** of the lock arm rivet assembly inward to release the lock arm rivet assembly from the slot of the L side plate.

(5) Extend the lock arm rivet assembly outward and release the joint **j'** from the boss of the chassis rivet assembly. The roller guide springs on both sides come off at the same time.

CAUTION:

When reassembling, reattach the left and right roller guide springs to the lock arm rivet assembly before reattaching the lock arm rivet assembly to the chassis rivet assembly. Make sure to fit the part k' of the roller guide spring inside of the roller guide. (Refer to Fig.34.)

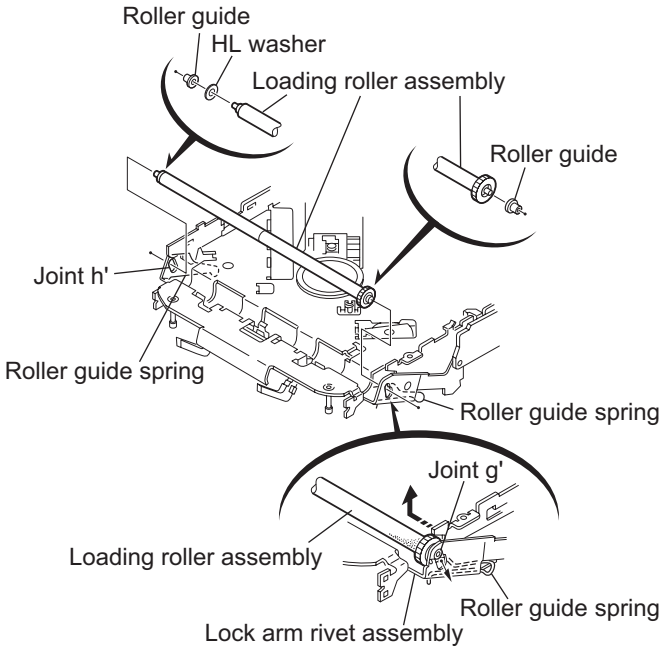


Fig.31

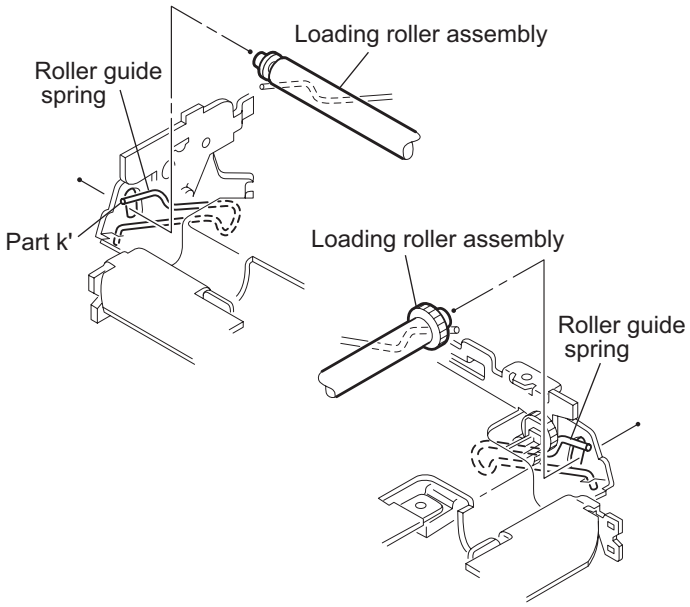


Fig.32

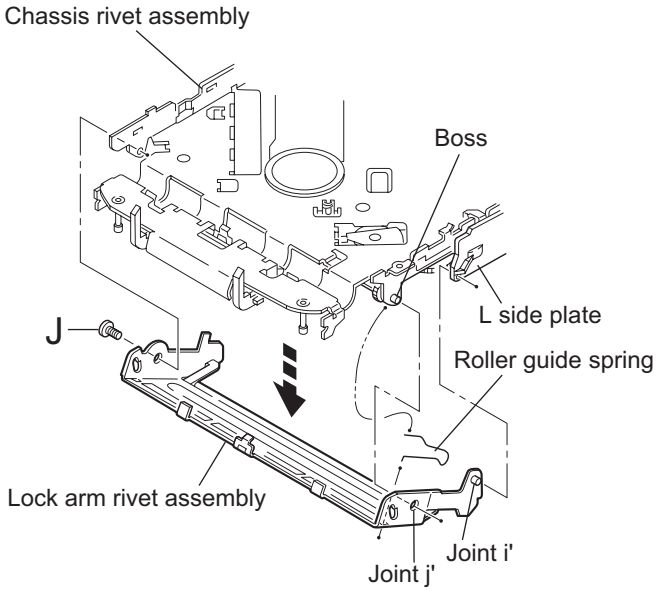


Fig.33

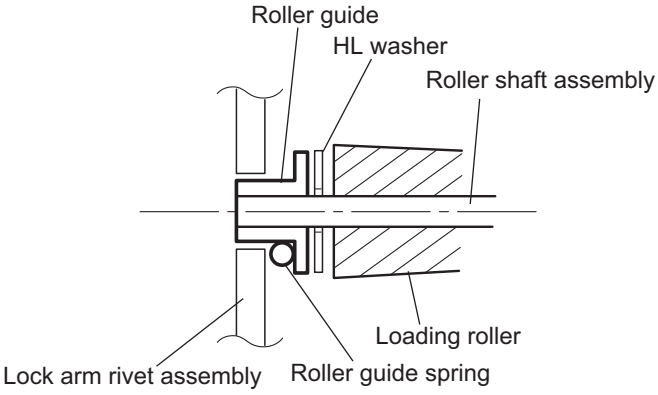


Fig.34

2.2.16 Removing the loading gear 5, 6 and 7 (See Figs.35 and 36)

- Prior to performing the following procedure, remove the top cover, chassis unit, pickup unit and top plate assembly.
  (1) Remove the screw **K** attaching the loading gear bracket. The loading gear 6 and 7 come off the loading gear bracket.
  (2) Pull out the loading gear 5.

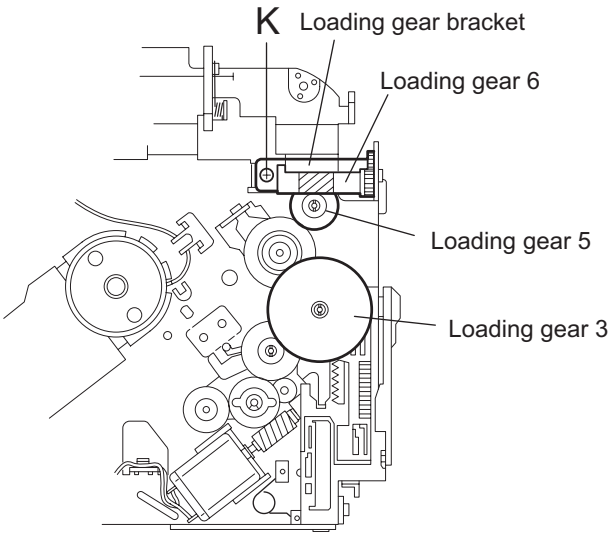


Fig.35

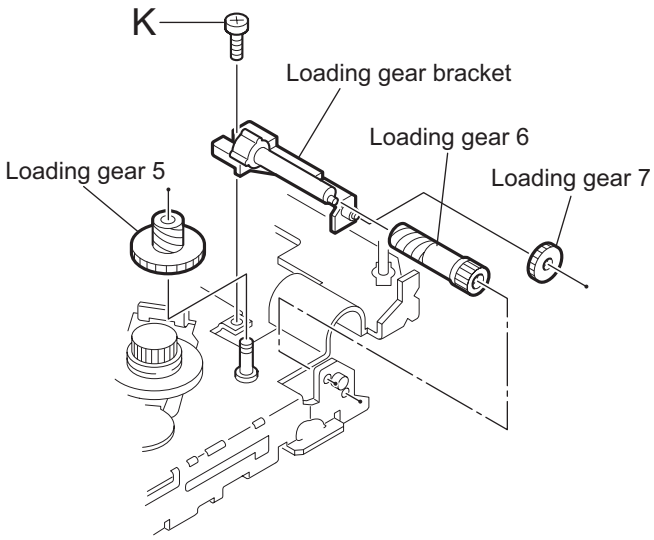


Fig.36

2.2.17 Removing the gears
(See Figs.37 to 40)

- Prior to performing the following procedure, remove the top cover, chassis unit, top plate assembly and pickup unit.
- Pull out the loading gear 3. (See Fig.35.)
  (1) Pull out the feed gear.
  (2) Move the loading plate assembly in the direction of the arrow to release the L side plate from the two slots m' of the chassis rivet assembly. (See Fig.37.)
  (3) Detach the loading plate assembly upward from the chassis rivet assembly while releasing the joint **n'**. Remove the slide hook and loading plate spring from the loading plate assembly.
  (4) Pull out the loading gear 2 and remove the change lock lever.
  (5) Remove the E ring and washer attaching the change gear 2.
  (6) The change gear 2, change gear spring and adjusting washer come off.
  (7) Remove the loading gear 1.
  (8) Move the change plate rivet assembly in the direction of the arrow to release from the three shafts of the chassis rivet assembly upward. (See Fig.38.)
  (9) Detach the loading gear plate rivet assembly from the shaft of the chassis rivet assembly upward while releasing the joint **p'**. (See Figs.38 and 40.)
  (10) Pull out the loading gear 4.

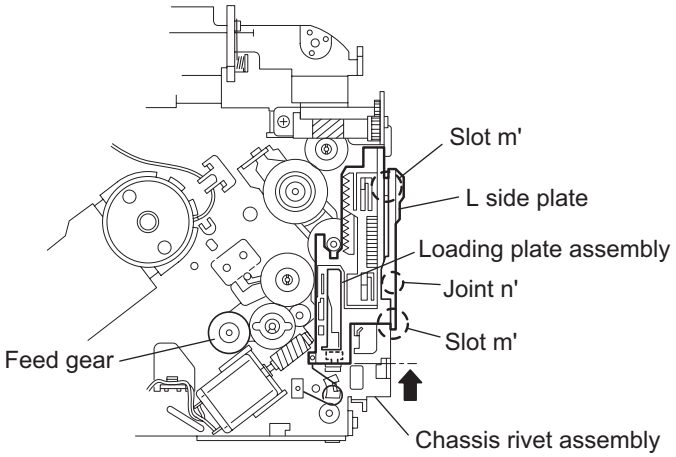


Fig.37

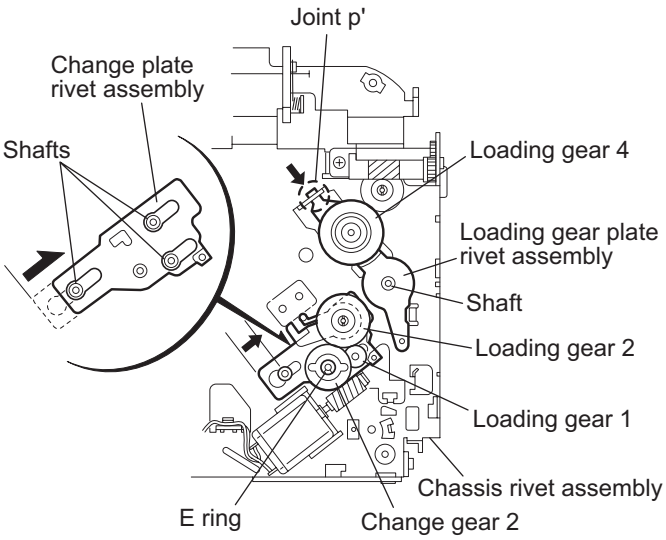


Fig.38

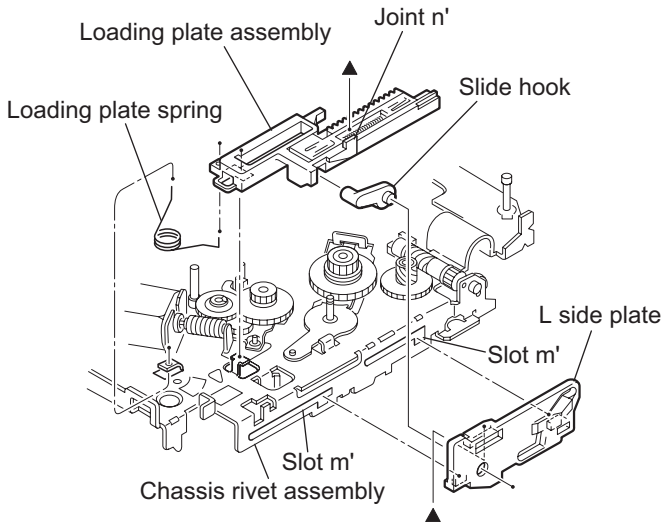


Fig.39

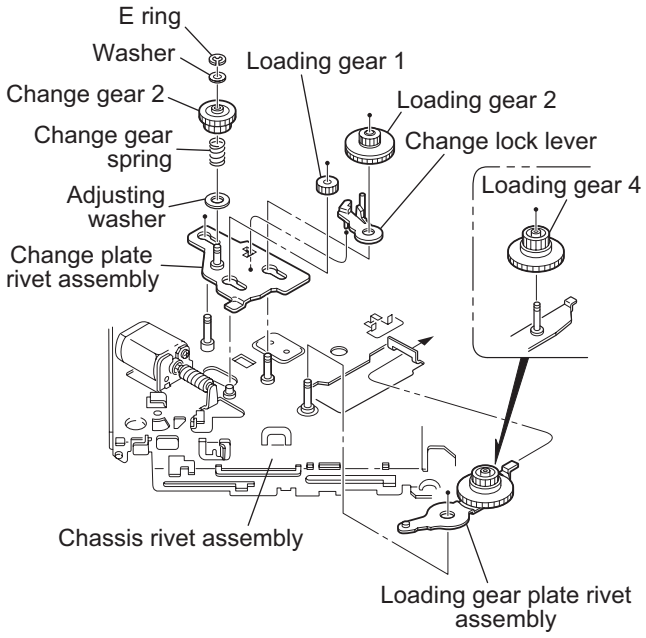


Fig.40

2.2.18 Removing the turn table / spindle motor (See Figs.41 and 42)

- Prior to performing the following procedure, remove the top cover, connector board, chassis unit and clamper assembly.
  (1) Remove the two screws **L** attaching the spindle motor assembly through the slot of the turn table on top of the body.
  (2) Unsolder the wire on the connector board if necessary.

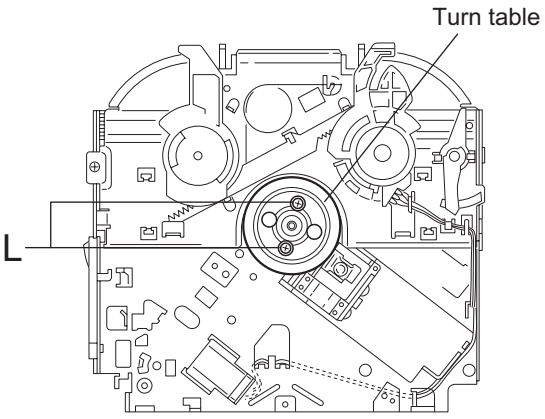


Fig.41

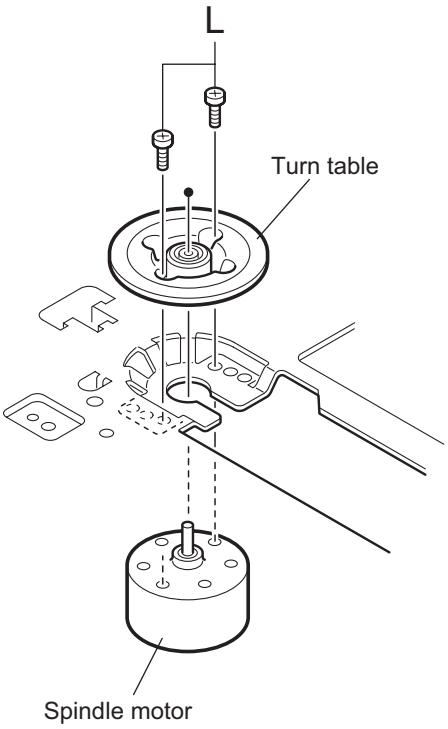


Fig.42

SECTION 3
Adjustment

3.1 Adjustment method

■ **Test instruments required for adjustment**

(1) Digital oscilloscope (100MHz)
(2) AM Standard signal generator
(3) FM Standard signal generator
(4) Stereo modulator
(5) Electric voltmeter
(6) Digital tester
(7) Tracking offset meter
(8) Test Disc JVC :CTS-1000
(9) Extension cable for check
EXTSH002-22P × 1

■ **Standard volume position**

Balance and Bass &Treble volume : Indication"0"
Loudness : OFF

■ **Standard measuring conditions**

Power supply voltage	DC14.4V(11 to 16V)
Load impedance	20KΩ(2 Speakers connection)
Output Level	Line out 2.0V (Vol. MAX)

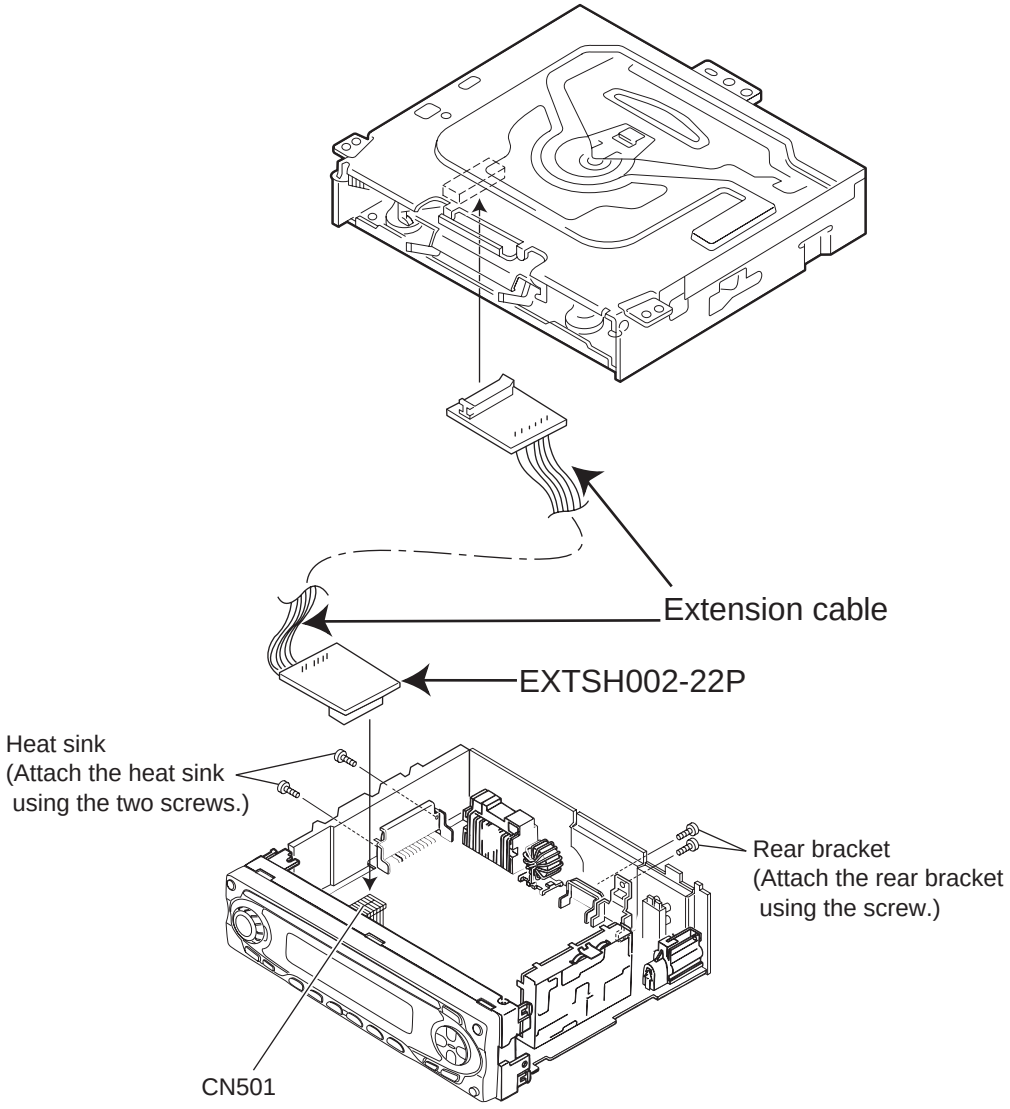
■ **Dummy load**

Exclusive dummy load should be used for AM,and FM. For FM dummy load,there is a loss of 6dB between SSG output and antenna input.The loss of 6dB need not be considered since direct reading of figures are applied in this working standard.

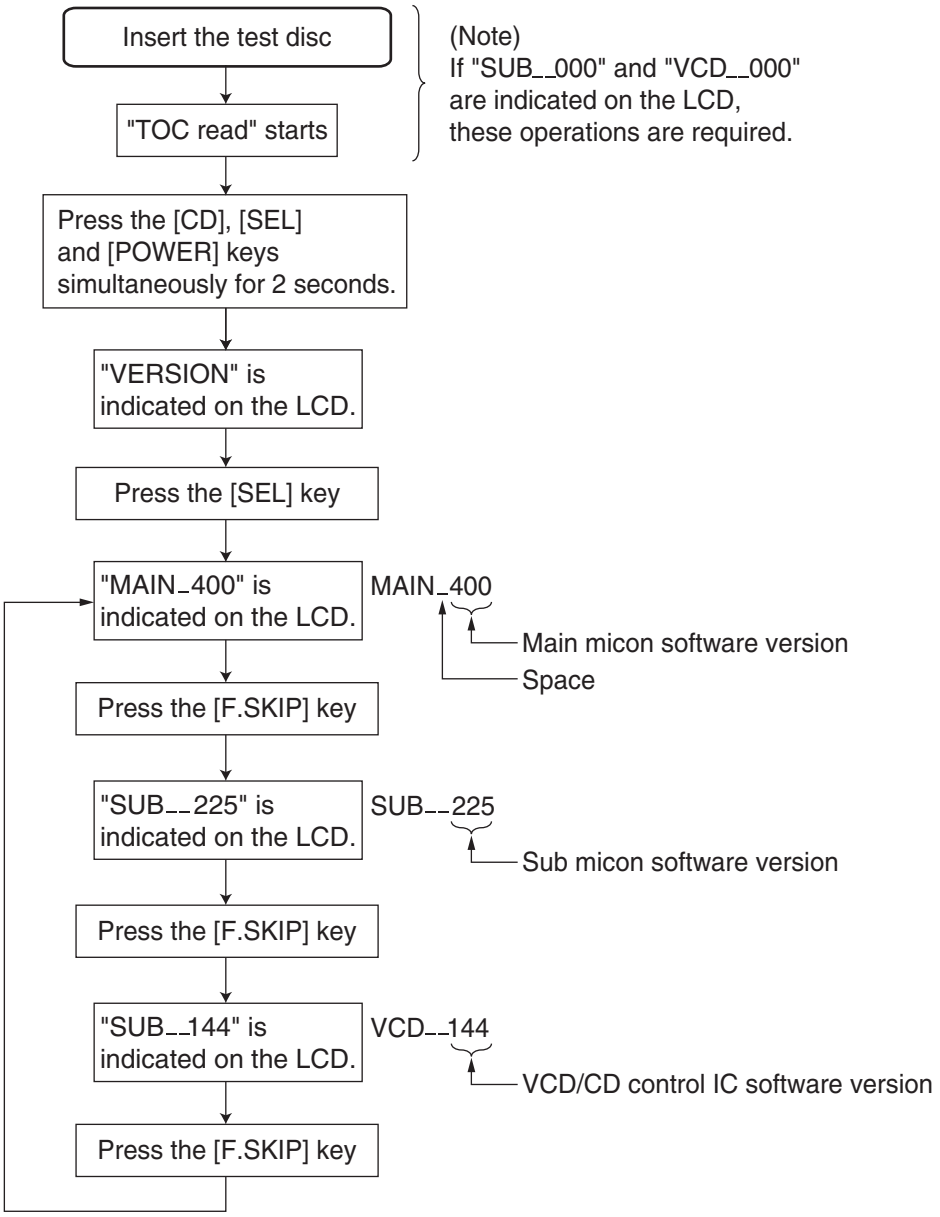
■ **How to connect the extension cable for adjusting**

Caution:

Be sure to attach the heat sink and rear bracket onto the power amplifier IC and regulator IC respectively, before supply the power. If voltage is applied without attaching these parts, the power amplifier IC and regulator IC will be destroyed by heat.



■ Operation method



Sequence of LCD diaplay

- Press the [F.SKIP] . . . . . MAIN → SUB → VCD/CD → MAIN → · · ·
- Press the [B.SKIP] . . . . . MAIN → VCD/CD → SUB → MAIN → · · ·

Cancellation of service mode

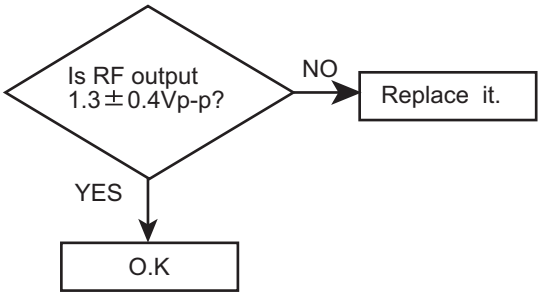
- No operation for ten seconds → Return to normal display
- Press the key except for [F.SKIP] or [B.SKIP] key → Return to normal display

3.3 Maintenance of laser pickup

(1) Cleaning the pick up lens
Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

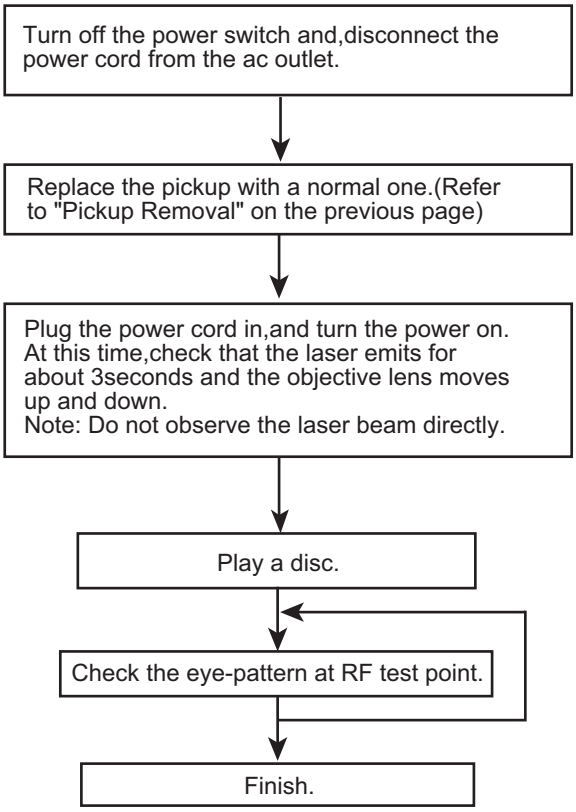
(2) Life of the laser diode
When the life of the laser diode has expired, the following symptoms will appear.

- The level of RF output (EFM output: amplitude of eye pattern) will be low.



(3) Semi-fixed resistor on the APC PC board
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced. If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

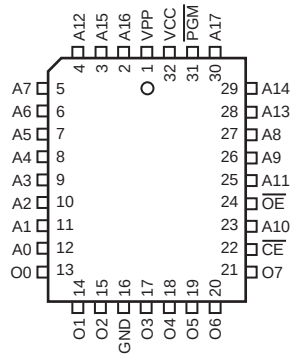
3.4 Replacement of laser pickup


Turn off the power switch and,disconnect the power cord from the ac outlet.
Replace the pickup with a normal one.(Refer to "Pickup Removal" on the previous page)
Plug the power cord in,and turn the power on. At this time,check that the laser emits for about 3seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.
Play a disc.
Check the eye-pattern at RF test point.
Finish.

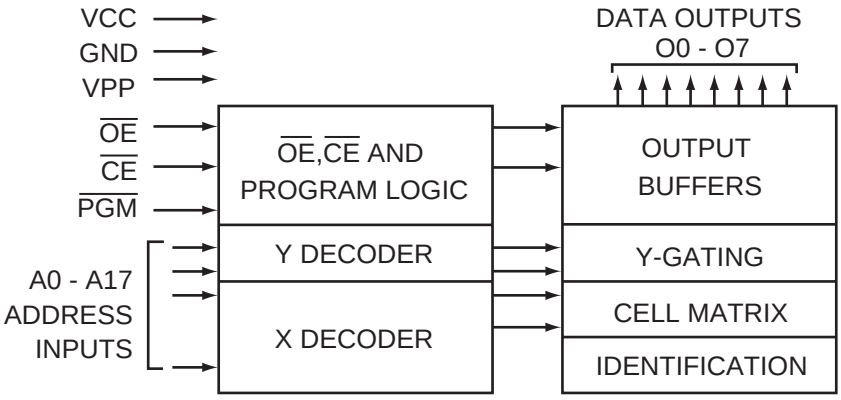
SECTION 4
Description of major ICs

4.1 AT27C020-70JCU5 (IC102) : 2M-bit (256K x 8) OTP EPROM

- Pin Layout



- Block Diagram

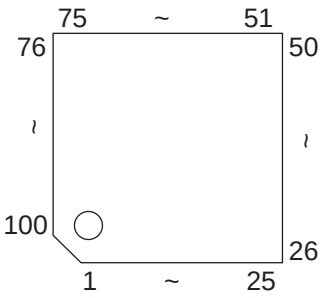


- Pin function

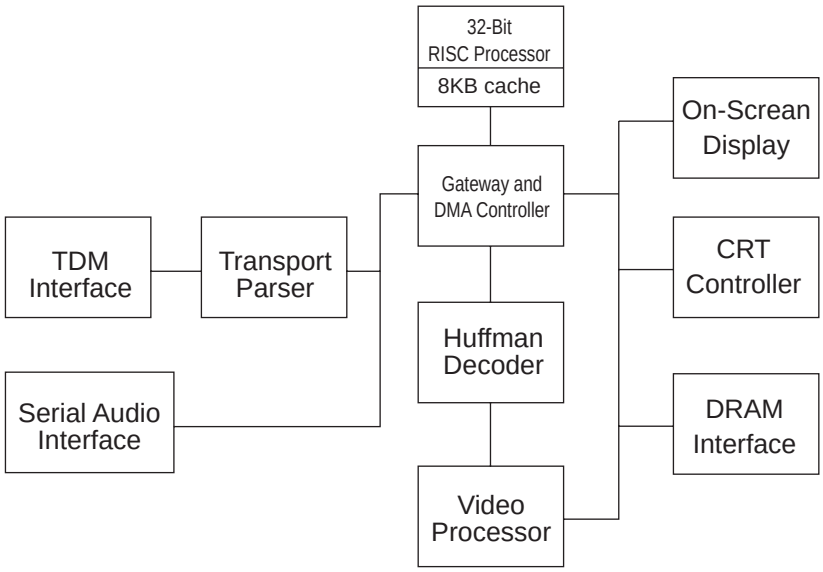
Pin No.	Symbol	Function
1	VPP	Power supply
2	A16	Address input
3	A15	Address input
4	A12	Address input
5 to 12	A7 to A0	Address inputs
13 to 15	O0 to O2	Outputs
16	O3 to O7	Outputs
17 to 21	GND	Ground
22	CE	Chip enable
23	A10	Address input
24	OE	Output enable
25	A11	Address input
26	A9	Address input
27	A8	Address input
28	A13	Address input
29	A14	Address input
30	A17	Address input
31	PGM	Program strobe
32	VCC	Power supply

4.2 ES3880FM (IC101) : Video CD processor

- Pin Layout



- Block Diagram



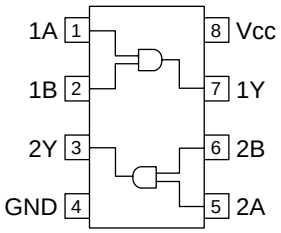
- Pin function

Pin No.	Symbol	I/O	Descriptions
1	VDD	I	2.85V power supply.
2	RAS#	O	Memory row address strobe (active-low).
3	DWE#	O	Memory write enable (active-low).
4~12	MA[8:0]	O	Multiplexed memory row and column address.
13~28	DBUS[0:15]	I/O	Memory data.
29	RESET#	I	System reset (active-low)
30	VSS	I	Ground.
31	VDD	I	2.85V power supply.
32~39	YUV[0:7]	O	B-bit YUV output.
40	VSYNC	I/O	Vertical sync; programmable for rising or falling edge.
41	HSYNC	I/O	Horizontal sync; programmable for rising or falling edge.
42	CPUCLK	I	RISC and system clock input.
43	PCLK2X	I/O	Doubled pixel clock I/O for screen video interface.
44	PCLK	I/O	27-MHz pixel clock qualifier I/O for screen video interface.
45~49	AUX[0:7]	I/O	Auxillary control (AUX0 and AUX1 are open collectors).
50	VSS	I	Ground.
51	VDD	I	2.85V power supply.
52~54	AUX[0:7]	I/O	Auxillary control (AUX0 and AUX1 are open collectors).
55~62	LD[0:7]	I/O	RISC interface data.

Pin No.	Symbol	I/O	Descriptions
63	LWR#	O	RISC interface write enable (active-low).
64	LOE#	O	RISC interface output enable (active-low).
65~67	LCS[3,1,0]#	O	RISC interface chip select (active-low).
68~79	LA[0:17]	O	RISC interface address.
80	VSS	I	Ground.
81	VPP	I	5.0V power supply.
82~87	LA[0:17]	O	RISC interface address.
88	ACLK	I/O	Master clock for external audio DAC (8.192MHz, 11.2896MHz, 12.288MHz, 16.9344MHz, and 18.432MHz).
89	AOUT	O	Audio interface serial data.
	SEL_PLL0	I	Used with SEL_PLL1 pin 91 to select phase-lock loop (PLL) clock frequency of CPUCLK pin 42: 00 = bypass PLL. 01 = 54MHz PLL. 10 = 67.5MHz PLL. 11 = 81MHz PLL.
90	ATCLK	I/O	Audio transmit bit clock.
91	ATFS	O	Audio interface transmit frame sync.
	SEL_PLL1	I	Used with SEL_PLL0 pin 89 to select phase-lock loop (PLL) clock frequency of CPUCLK pin 42,
92	MA9	O	Multiplexed memory row and column address.
	DOE#	O	Memory output enable (active-low).
93	AIN	I	Audio interface serial data.
94	ARFS	I	Audio receive bit clock.
95	ARCLK	I	Audio interface receive frame sync.
96	TDMCLK	I	TDM serial clock.
97	TDMDR	I	TDM serial data receive.
98	TDMFS	I	TDM frame sync.
99	CAS#	O	Memory colomn address strobe (active-low).
100	VSS	I	Ground.

4.3 TC7W08FU-X (IC107) : Nand gate

- Pin layout & Block diagram

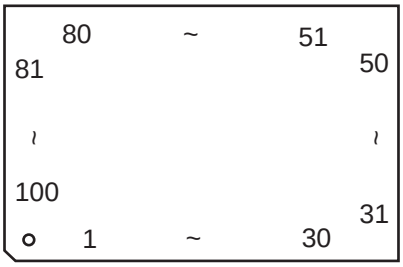


- Truth table

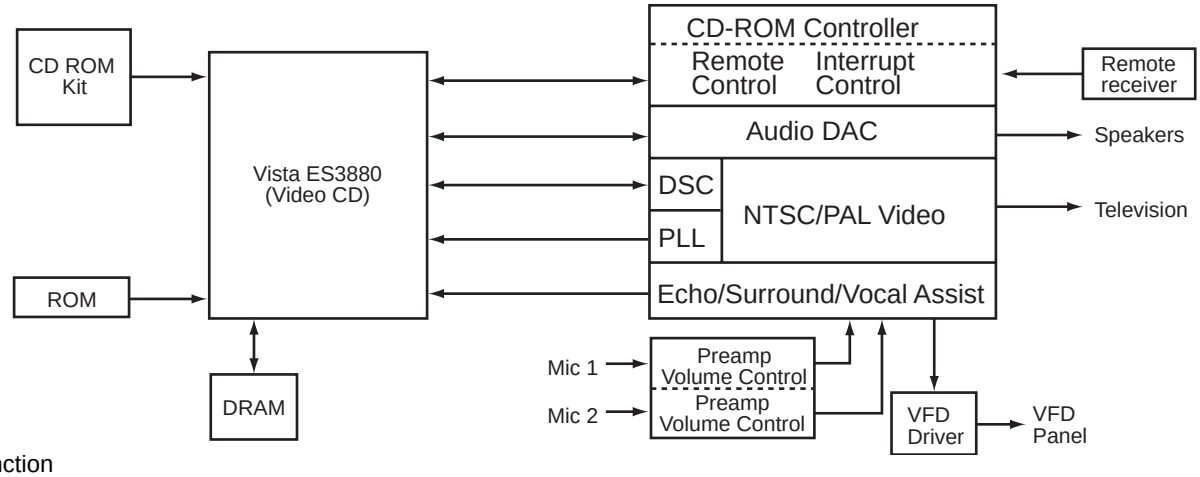
A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

4.4 ES3883F(IC104):VCD Companion chip

- Pin function



- Blockdiagram



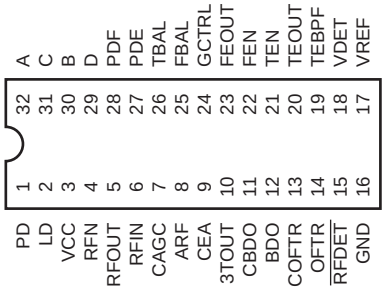
- Pin function

Pin No.	Symbol	I/O	Function
1,25:26,31,72,75,77,91,100	VSS	I	Ground.
5,16,32,66,73,78,90	VCC	I	Voltage supply 5v.
6	DSC_C	I	Clock programming to access internal registers.
7	AUX0	I/O	Servo Foward or Control Pin.
9	AUX1	I/O	Servo Reverse or Control Pin.
11	AUX2	I/O	Servo LDON or Control Pin.
70	AUX3	I/O	Servo CW/Limit or Control Pin.
69	AUX4	I/O	Servo CCW/Close or Control Pin.
68	AUX5	I/O	Servo Data or Control Pin.
67	AUX6	I/O	Servo XLAT or Control Pin/VFD_DO.
14	AUX7	I/O	Servo BRKM/Sense or Control Pin/VFD_DI.
18	AUX8	I/O	Servo Mute/Open or Control Pin/VFD_CLK.
20	AUX9	I/O	Servo SQS0 or Control Pin.
34	AUX10	I/O	Servo SQCK or Control Pin.
35	AUX11	I/O	3880 IRQ or Interrupt Output or Control Pin.
36	AUX12	I/O	CD C2PO or Interrupt input or Control Pin.
38	AUX13	I/O	Serial Interrupt/CD-Mute or Control Pin.
39	AUX14	I/O	Servo SCOR(S0S1) or Interrupt Input or Control Pin.
40	AUX15	I/O	Interrupt Input or Control Pin.
81,83,85,93,95,97,99,8	DSC_D[7:0]	I/O	Data for programming to access Internal registers.
10	DSC_S	I	Strobe for programming to access Internal registers.
12	DCLK	O	Dual-purpose pin DCLK is the MPEG decoder clock.
	EXT_CLK	I	EXT_CLK is the external clock EXT_CLK is an input during bypass PLL mode.
13	RESET_B	I	Video reset(active-low).
15	MUTE	O	Audio mute.
17	MCLK	I	Audio master clock.
19	TWS	I	Dual-purpose pin TWS is the transmit audio frame sync.
	SPLL_OUT	O	SPLL_OUT is the select PLL output.
21	TSD	I	Transmit audio data input.
22	TBCK	I	Transmit audio bit clock.

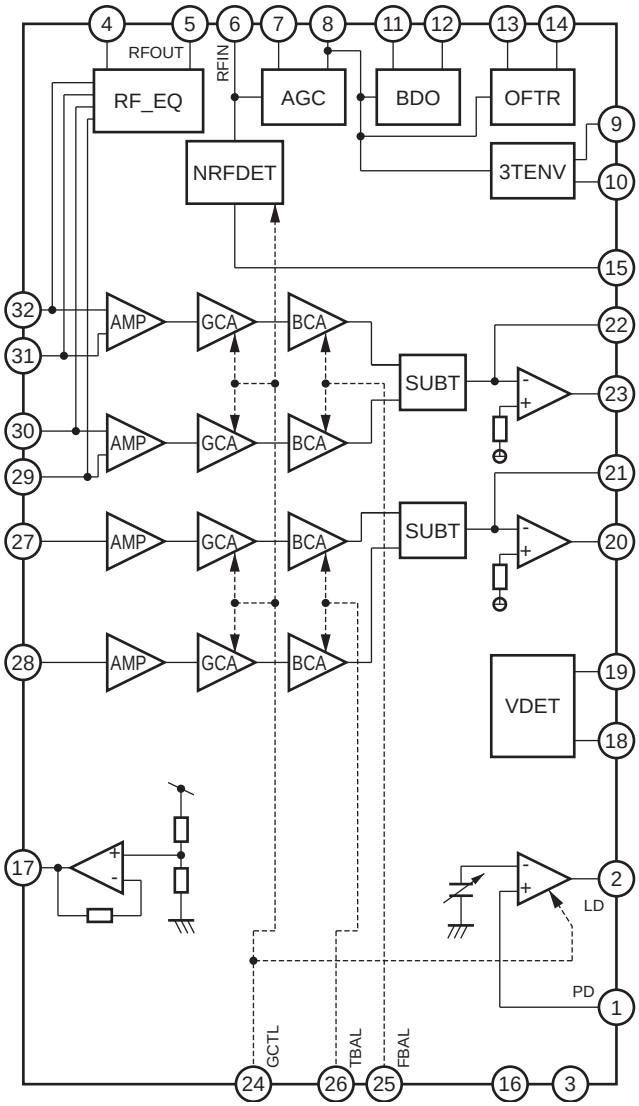
Pin No.	Symbol	I/O	Function
23	RWS	O	Dual-purpose pin RWS is the audio frame sync.
	SEL_PLL1	I	Pins SEL_PLL[1.0] select the PLL clock frequency for the DCLK output. **SEL_PLL1 SEL_PLL0** DCLK **0 0** Bypass PLL(input mode) **0 0** 27 MHz(output mode) **1 0** 32.4 MHz(output mode) **1 1** 40.5 MHz(output mode)
24	RSTOUT_B	O	Reset output(active-low).
2:4,27:30,76	NC		No connect.Do not connect to these pins.
33	RSD	O	Dual-purpose pin. RSD is the receive audio data input.
	SEL_PLL0	I	SEL_PLL0 along with SEL_PLL1 select the PLL clock frequency for the DCLK output.See the table for pin number 23.
37	RBCK	O	Dual-purpose pin.RBCK is the receive audio bit clock.
	SER_IN	I	SER_IN is the serial input DSC mode. 0-Parallel DSC mode. 1-Serial DSC mode.
41,51	VSSAA	I	Audio Analog Ground.
42	VCM	I	ADC Common Mode Reference(CMR) buffer output.CMR is approximately 2.25V.Bypass to analog ground with 47µF electrolytic in parallel with 0.1µF.
43	VREFP	I	DAC and ADC maximum reference. Bypass to VCMR with 10µF in parallel with 0.1µF.
44	VCCAA	I	Analog VCC, 5V.
45:46	AOR+,AOR-	O	Right channel output.
47:48	AOL-,AOL+	O	Left channel input.
49	MIC1	I	Microphone input 1.
50	MIC2	I	Microphone 2.
52	VREF	I	Internal resistor divider generates Common Mode Reference(CMR) voltage. Bypass to analog ground with 0.1µF.
53	VREFM	I	DAC and ADC minimum reference. Bypass to VCMR with 10µF in parallel with 0.1µF.
54	RSET	I	Full scale DAC current adjustment.
55	COMP	I	Compensation pin.
56:57,62:63	VSSAV	I	Video Analog Ground
58	CDAC	O	Modulates chrominance output.
59,60	VCCAV	I	Video VCC, 5V
61	YDAC	O	Y luminance data bus for screen video port.
64	VDAC	O	Composite video output.
65	ACAP	I	Audio CAP.
71	XOUT	O	Crystal output.
74	XIN	I	27 MHz crystal input.
79	PCLK	I/O	13.5 MHz pixel clock.
80	2XPCLK	I/O	27 MHz(2 times pixel clock).
82	HSYN_B	O	Horizontal sync(active-low).
84	VSYN_B	O	Vertical sunc(active-low).
86:89,92,94,96,98	YUV[7:0]	I	YUV data bus for screen video port.

4.5 AN22000A (IC601) : RF & SERVO AMP

- Terminal layout


A C B D PDF PDE TBAL FBAL GCTRL FEOUT FEN TEN TEOUT TEBPF VDET VREF
32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
PD LD VCC RFN RFOUT RFIN CAGC ARF CEA 3TOUT CBDO BDO COFTR OFTR RFDET GND

- Block diagram

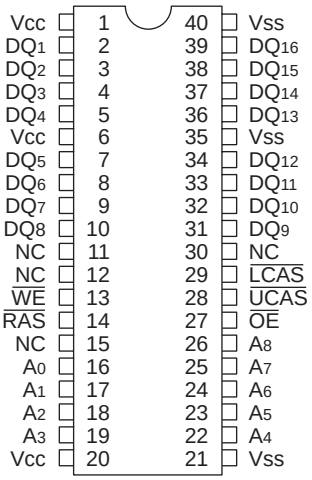


- Pin function

Pin No.	Symbol	I/O	Function
1	PD	I	APC Amp. input terminal
2	LD	O	APC Amp. output terminal
3	VCC	-	Power supply terminal
4	RFN	I	RF adder Amp. inverting input terminal
5	RFOUT	O	RF adder Amp. output terminal
6	RFIN	I	AGC input terminal
7	CAGC	I	Input terminal for AGC loop filter capacitor
8	ARF	O	AGC output terminal
9	CEA	I	Capacitor connecting terminal for HPF-Amp.
10	3TOUT	O	3 TENV output terminal
11	CBDO	I	Capacitor connecting terminal for envelope detection on the darkness side
12	BDO	O	BDO output terminal
13	COFTR	I	Capacitor connecting terminal for envelope detection on the light side
14	OFTR	O	OFTR output terminal
15	NRFDET	O	NRFDET output terminal
16	GND	-	Ground
17	VREF	O	VREF output terminal
18	VDET	O	VDET output terminal
19	TEBPF	I	VDET output terminal
20	TEOUT	O	TE Amp. output terminal
21	TEN	I	TE Amp. inverting input terminal
22	FEN	I	FE Amp. inverting input terminal
23	FEOUT	O	FE Amp. output terminal
24	GCTL	O	GCTL & APC terminal
25	FBAL	O	FBAL control terminal
26	TBAL	O	TBAL control terminal
27	E	I	Tracking signal input terminal 1
28	F	I	Tracking signal input terminal 2
29	D	I	Focus signal input terminal 4
30	B	I	Focus signal input terminal 3
31	C	I	Focus signal input terminal 2
32	A	I	Focus signal input terminal 1

4.6 GLT44016-35J4-X (IC103) : Dram

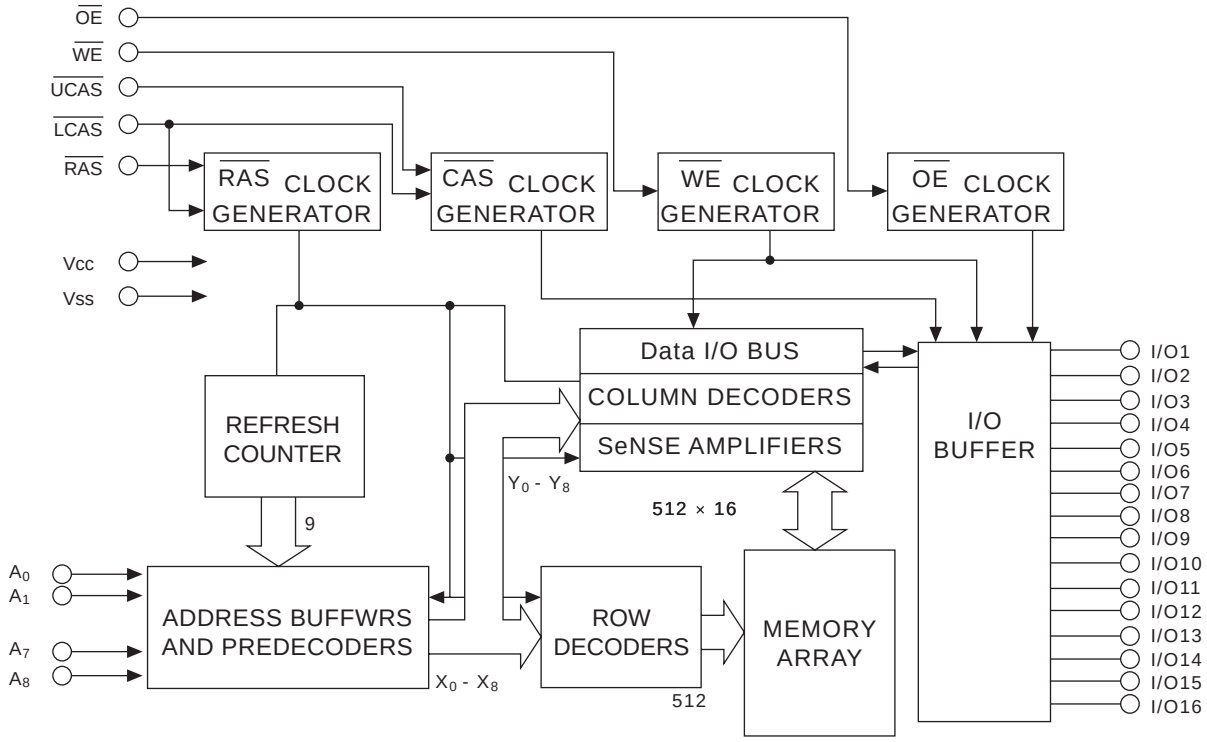
- Pin layout



- Pin function

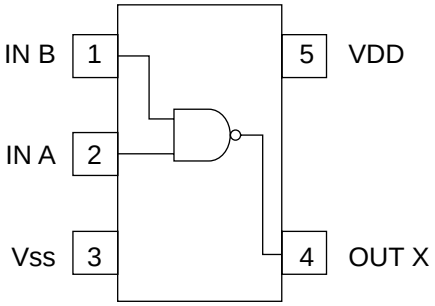
Pin Name	Function
A_0~A_8	Address inpits
$\overline{RAS}$	Row address strobe
$\overline{UCAS}$	Columu address strobe / upperbyte control
$\overline{LCAS}$	Columu address strobe / lower byte control
$\overline{WE}$	Write enable
$\overline{OE}$	Output enable
DQ_1~DQ_{16}	Dara inputs / outputs
Vcc	+5V power supply
Vss	Ground
NC	No connection

- Block diagram

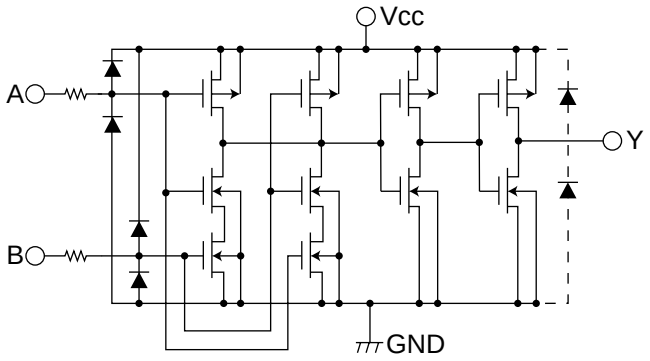


4.7 TC7S08F-W (IC106) : Buffer

- Pin layout

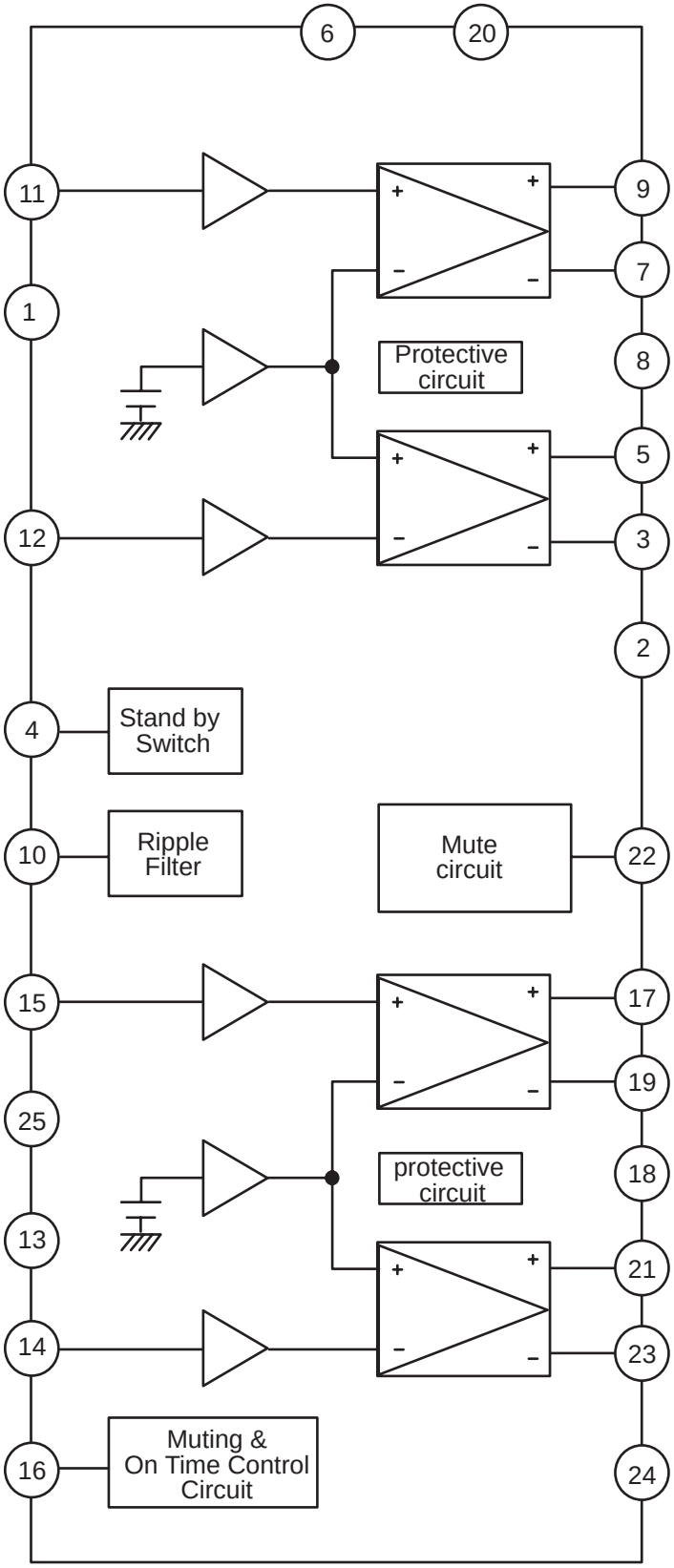


- Block diagram

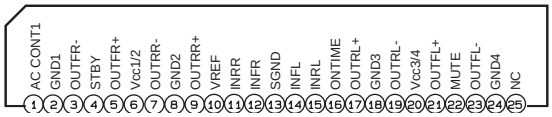


4.8 LA47505 (IC321) : Power amp.

- Terminal layout



• Terminal layout

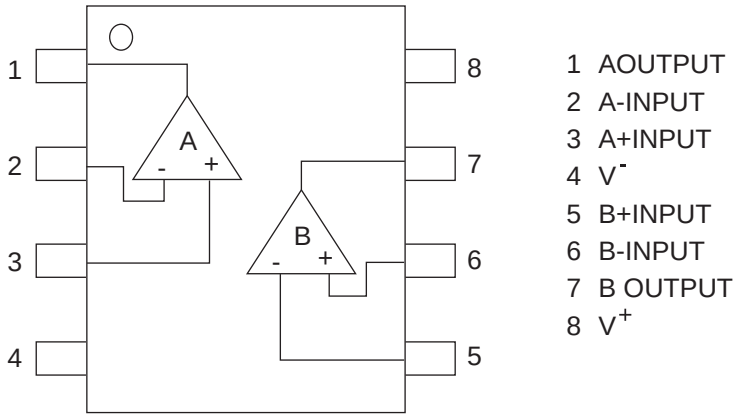


• Pin function

Pin No.	Symbol	Function
1	AC CONT1	Header of IC
2	GND1	Power GND
3	OUTFR-	Outpur(-) for front Rch
4	STBY	Stand by input
5	OUTFR+	Output (+) for front Rch
6	Vcc1/2	Power input
7	OUTRR-	Output (-) for rear Rch
8	GND2	Power GND
9	OUTRR+	Output (+) for rear Rch
10	VREF	Ripple filter
11	INRR	Rear Rch input
12	INFR	Front Rch input
13	SGND	Signal GND
14	INFL	Front Lch input
15	INRL	Rear Lch input
16	ONTIME	Power on time control
17	OUTRL+	Output (+) for rear Lch
18	GND3	Power GND
19	OUTRL-	Output (-) for rear Lch
20	Vcc3/4	Power input
21	OUTFL+	Output (+) for front
22	MUTE	Muting control input
23	OUTFL-	Output (-) for front
24	GND4	Power GND
25	NC	No connection

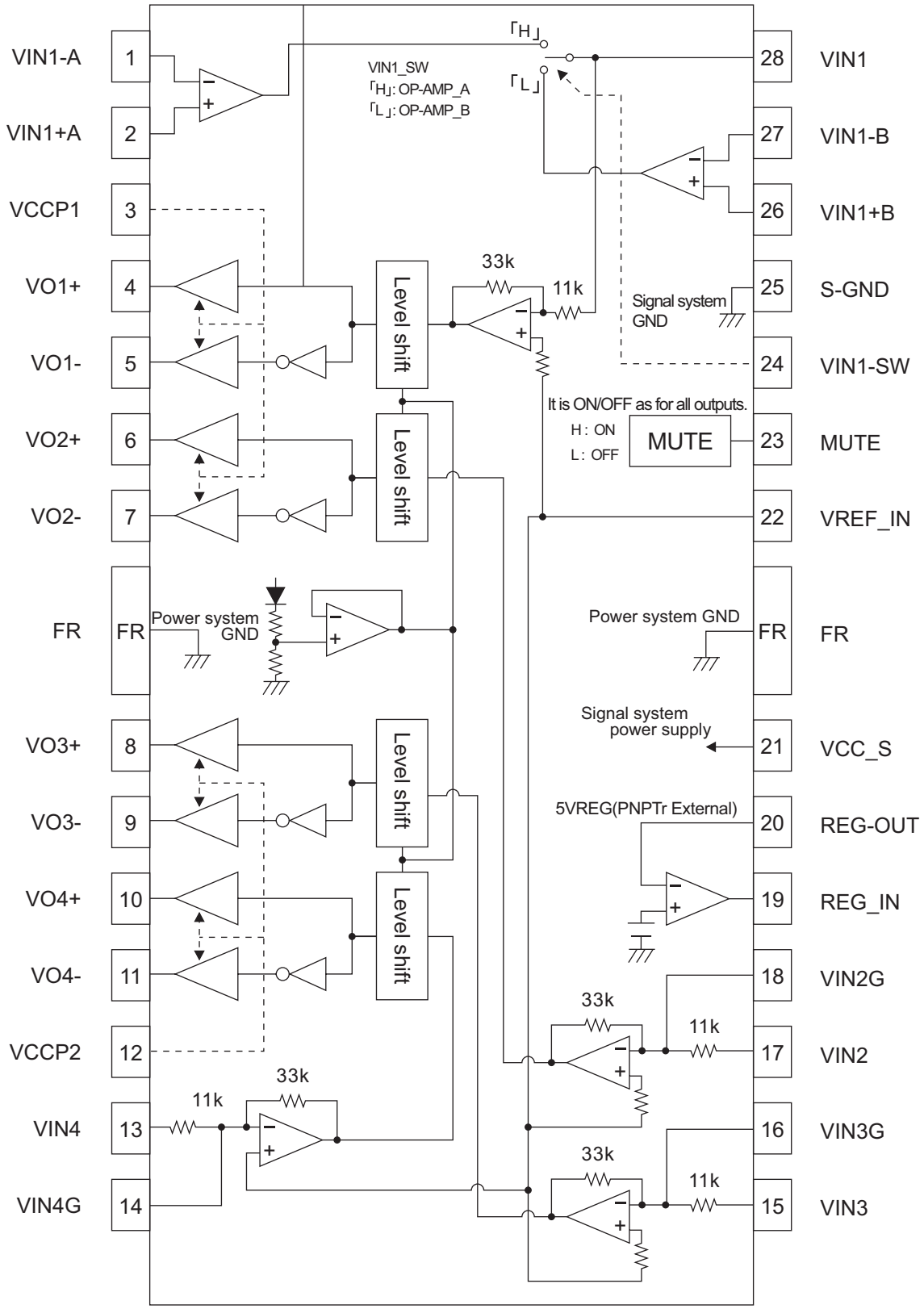
4.9 NJM4565V-X (IC151) : Dual ope amp

• Terminal layout & Pin function



4.10 LA6589H-X (IC501) : BTL driver

- Pin layout & Block diagram



• Pin function

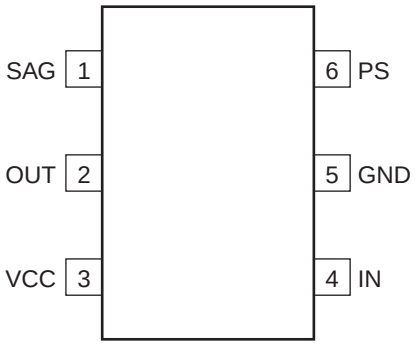
Pin No.	Symbol	Function
1	VIN1-A	CH1 input AMP_A reversing input
2	VIN1+A	CH1 input AMP_A non-reversing input
3	VCCP1	CH1 and CH2 power steps power supply
4	VO1+	CH1 Output terminal (+)
5	VO1-	CH1 Output terminal (-)
6	VO2+	CH2 Output terminal (+)
7	VO2-	CH2 Output terminal (-)
8	VO3+	CH3 Output terminal (+)
9	VO3-	CH3 Output terminal (-)
10	VO4+	CH4 Output terminal (+)
11	VO4-	CH4 Output terminal (-)
12	VCCP2	CH3 and CH4 power steps power supply
13	VIN4	CH4 Input terminal
14	VIN4G	CH4 Input terminal(For gain adjustment)
15	VIN3	CH3 Input terminal
16	VIN3G	CH3 Input terminal(For gain adjustment)
17	VIN2	CH2 Input terminal
18	VIN2G	CH2 Input terminal(For gain adjustment)
19	REGIN	External PNP transistor base connection
20	REG-OUT	5VREG output terminal and external PNP transistor collector connection
21	VCCS	Signal system power supply
22	VREFIN	Standard voltage impression terminal
23	MUTE	Output ON/OFF terminal
24	VIN1_SW	CH1 input OP_AMP switch terminal
25	S_GND	Signal system GND
26	VIN1+B	CH1 AMP_B non-reversing input terminal
27	VIN1-B	CH1 AMP_B reversing input terminal
28	VIN1	CH1 input terminal and input OP_AMP output terminal

*1 Frame (FR) at the center becomes system GND(P-GND) power . Please give (*O) as the lowest potential with system GND(S-GND) signal.

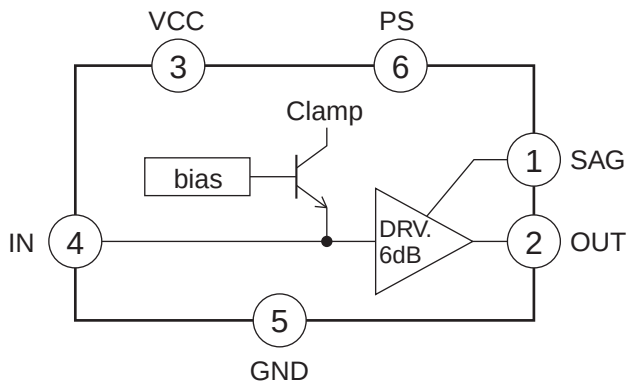
*2 Be short-circuited of VCC_S (signal system power supply) and VCCP1 and VCCP2 (output steps power supply) on the outside.

4.11 MN1510XN-X (IC550) : Driver

• Pin Layout

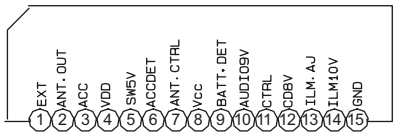


• Block Diagram

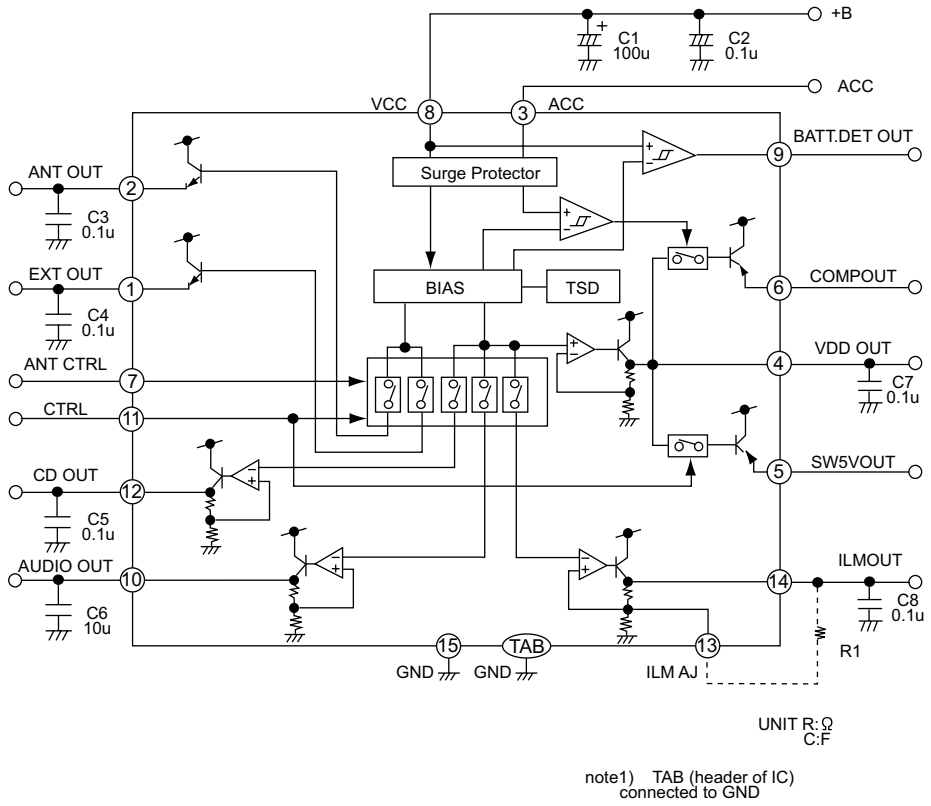


4.12 HA13164A (IC901) : Regulator

- Terminal layout



- Block diagram

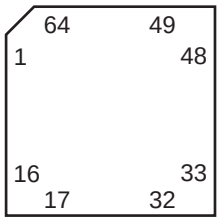


- Pin function

Pin No.	Symbol	Function
1	EXTOUT	Output voltage is VCC-1 V when M or H level applied to CTRL pin.
2	ANTOUT	Output voltage is VCC-1 V when M or H level to CTRL pin and H level to ANT-CTRL.
3	ACCIN	Connected to ACC.
4	VDDOUT	Regular 5.7V.
5	SW5VOUT	Output voltage is 5V when M or H level applied to CTRL pin.
6	COMPOUT	Output for ACC detector.
7	ANT CTRL	L:ANT output OFF H:ANT output ON
8	VCC	Connected to VCC.
9	BATT DET	Low battery detect.
10	AUDIO OUT	Output voltage is 9V when M or H level applied to CTRL pin.
11	CTRL	L:BIAS OFF M:BIAS ON H:CD ON
12	CD OUT	Output voltage is 8V when H level applied to CTRL pin.
13	ILM AJ	Adjustment pin for ILM output voltage.
14	ILM OUT	Output voltage is 10V when M or H level applied to CTRL pin.
15	GND	Connected to GND.

4.13 MN101C30ACK1 (IC251) : Unit micon

- Pin Layout



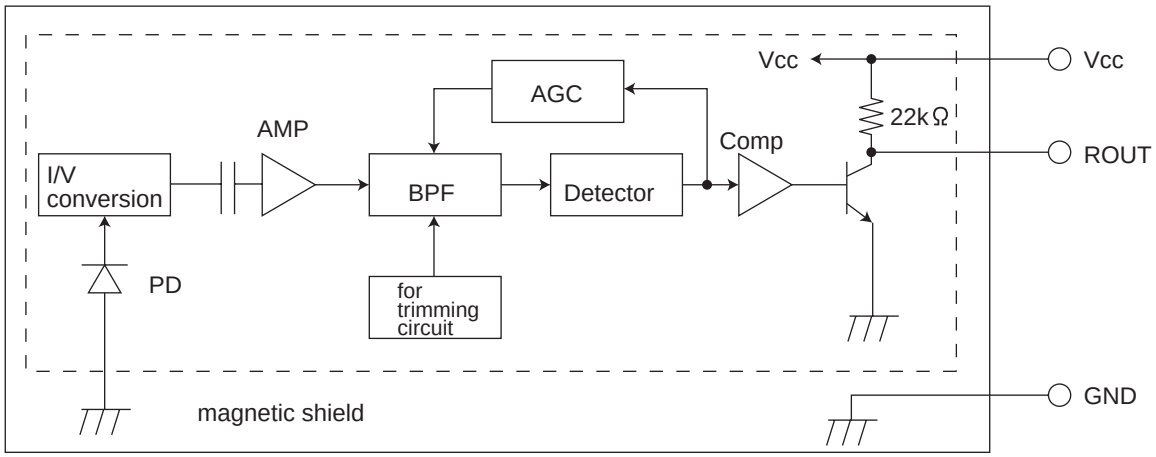
- Pin function

Pin No.	Symbol	I/O	Function
1,2	/SW1, /SW2	I	SW1,SW2 input
3	/SW3	I	Connect to ground
4	PCHKCD	I	Connect to ground
5	PCHKVCD	I	Connect to ground
6	VREF+	I	Connect to VDD
7	VDD	-	Power supply
8	OSC2	O	Xtal output
9	OSC1	I	Xtal input
10	VSS	-	Ground
11	XI	I	Connect to ground
12	NC	-	Not connect
13	MMOD	I	Connect to ground
14	MSTAT	O	Status output
15	KCMD	I	Command input
16,17	NC	-	Not connect
18	SUBQ	I/O	SubQ. data
19	SQCK	I/O	SubQ. clock
20	/VCDRST	I/O	VCD reset
21	/CDMRST	I	Micon reset
22	NC	-	Not connect
23	UDSASTB	I/O	ES3883 STB for uDSA
24	UDSADAT	I/O	ES3883 DAT for uDSA
25	UDSAACK	I/O	ES3883 ACK for uDSA

Pin No.	Symbol	I/O	Function
26	NC	-	Not connect
27	BLKCK	I	SubQ. blk. clk
28	GND	-	Ground
29	PS2	I	PS2
30,31	GND	-	Ground
32	DSASTB	I/O	ES3880 STB for DSA
33	DSADAT	I/O	ES3880 DAT for DSA
34	DSAACK	I/O	ES3880 ACK for DSA
35	PS1	I/O	PS1 slave
36 to 48	NC	-	Not connect
49	REST	I/O	Rest SW
50	LM	O	Loading motor control
51	MSW	I/O	Motor control SW
52 to 55	NC	-	Not connect
56	/LSIRST	O	CD LSI reset output
57	STAT	I/O	Status
58	MDATA	I/O	Com.data
59	MCLK	I/O	Com.clock
60	MLD	I/O	Com.load
61	VREF-	I	Connect to ground
62	/TLOCK	I	Tracking lock signal input
63	/FLOCK	I	Focus lock signal input
64	SENSE	I	Sense signal input

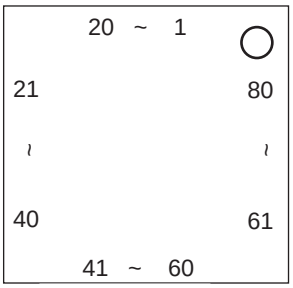
4.14 RPM6938-V4 (IC602) : Remocon reseiver

- Block diagram

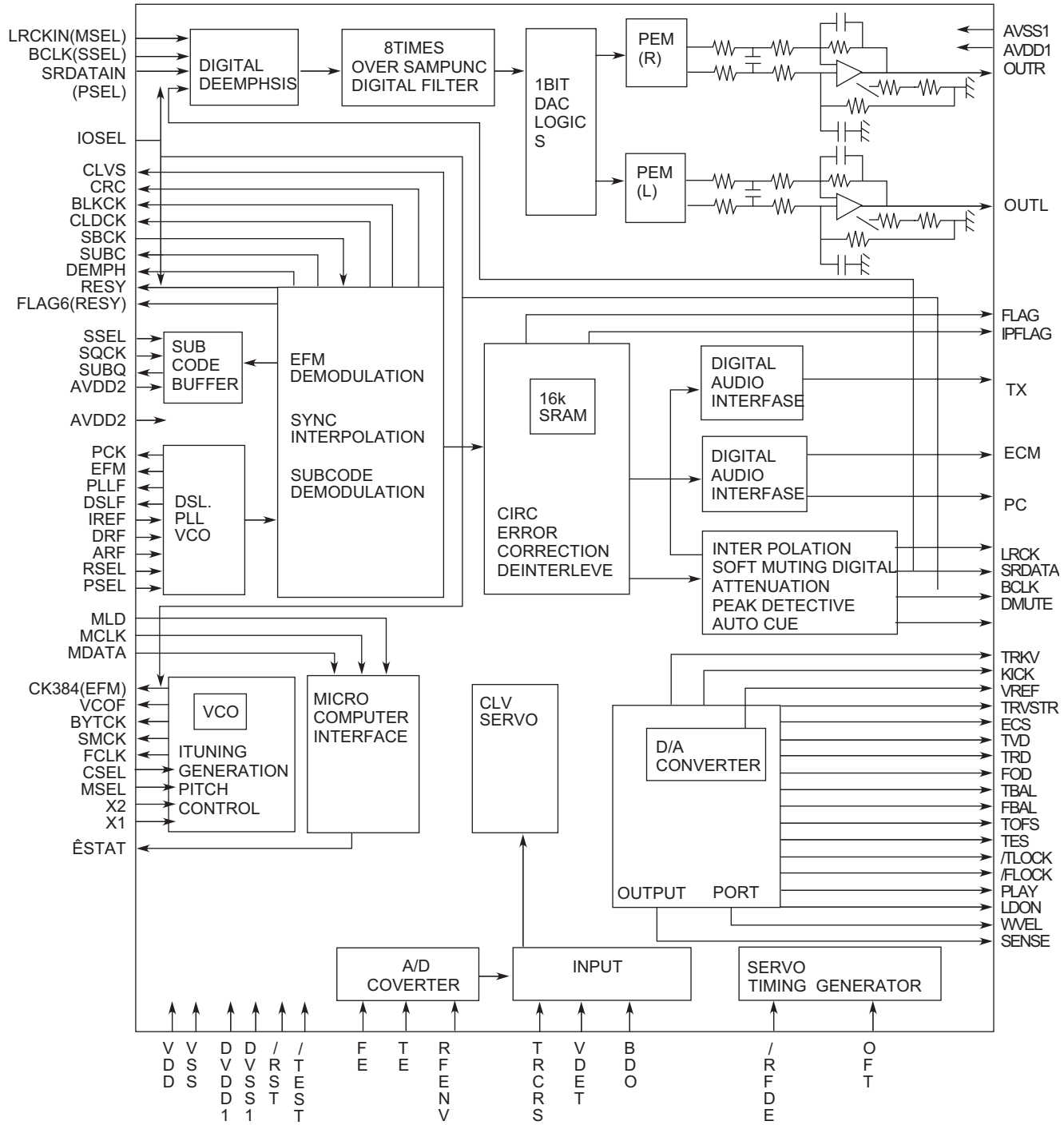


4.15 MN6627482WA (IC651) : DSP & DAC

- Pin layout



- Block diagram



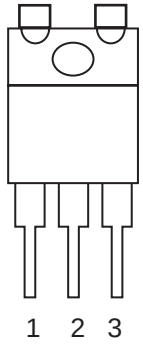
• Pin function

Pin No.	Symbol	I/O	Function
1	BCLK	O	Not used
2	LRCK	O	Not used
3	SRDATA	O	Not used
4	DVDD1	-	Power supply (Digital)
5	DVSS1	-	Connected to GND
6	TX	O	Not used
7	MCLK	I	CPU command clock signal input(Data is latched at signal's rising point)
8	MDATA	I	CPU command data input
9	MLD	I	CPU command load signal input
10	SENSE	O	Sense signal output
11	FLOCK	O	Focus lock signal output Active: Low
12	TLOCK	O	Tracking lock signal output Active: Low
13	BLKCK	O	sub-code/block/clock signal output
14	SQCK	I	Outside clock for sub-code Q resister input
15	SUBQ	O	Sub-code Q -code output
16	DMUTE		Connected to GND
17	STAT	O	Status signal(CRC,CUE,CLVS, TTSTOP,ECLV,SQOK)
18	RST	I	Reset signal input (L:Reset)
19	SMCK	-	Not used
20	PMCK	-	Not used
21	TRV	O	Traverse enforced output
22	TVD	O	Traverse drive output
23	PC	-	Not used
24	ECM	O	Spindle motor drive signal (Enforced mode output) 3-State
25	ECS	O	Spindle motor drive signal (Servo error signal output)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	-	Reference voltage input pin for D/A output block (TVD,FOD,FBA,TBAL)
30	FBAL	O	Focus Balance adjust signal output
31	TBAL	O	Tracking Balance adjust signal output
32	FE	I	Focus error signal input (Analog input)
33	TE	I	Tracking error signal input (Analog input)
34	RF ENV	I	RF envelope signal input (Analog input)
35	VDET	I	Vibration detect signal input (H:detect)
36	OFT	I	Off track signal input (H:off track)
37	TRCRS	I	Track cross signal input
38	RFDET	I	RF detect signal input (L:detect)
39	BDO	I	BDO input pin (L:detect)

Pin No.	Symbol	I/O	Function
40	LDON	O	Laser ON signal output (H:on)
41	PLLF2	-	Not used
42	TOFS	O	Tracking error shunt signal output (H:shunt)
43	WVEL	-	Not used
44	ARF	I	RF signal input
45	IREF	I	Reference current input pin
46	DRF	I	Bias pin for DSL
47	DSLF	I/O	Loop filter pin for DSL
48	PLLF	I/O	Loop filter pin for PLL
49	VCOF	-	Not used
50	AVDD2	-	Power supply (Analog)
51	AVSS2	-	Connected to GND (Analog)
52	EFM	-	Not used
53	PCK	-	Not used
54	VCOF2	-	PLL data slice output
55	SUBC	-	Not used
56	SBCK	-	Not used
57	VSS	-	Connected to GND (for X'tal oscillation circuit)
58	XI	I	Input of 16.9344MHz X'tal oscillation circuit
59	X2	O	Output of X'tal oscillation circuit
60	VDD	-	Power supply (for X'tal oscillation circuit)
61	BYTCK	-	Not used
62	CLDCK	-	Not used
63	FCLK	-	Not used
64	IPFLAG	-	Not used
65	FLAG	-	Not used
66	CLVS	-	Not used
67	CRC	-	Not used
68	DEMPH	-	Not used
69	RESY	-	Not used
70	IOSEL	-	pull up
71	TEST	-	pull up
72	AVDD1	-	Power supply (Digital)
73	OUT L	O	Lch audio output
74	AVSS1	-	Connected to GND
75	OUT R	O	Rch audio output
76	RSEL	-	pull up
77	CSEL	-	Connected to GND
78	PSEL	-	Connected to GND
79	MSEL	-	Connected to GND
80	SSEL	-	Pull up

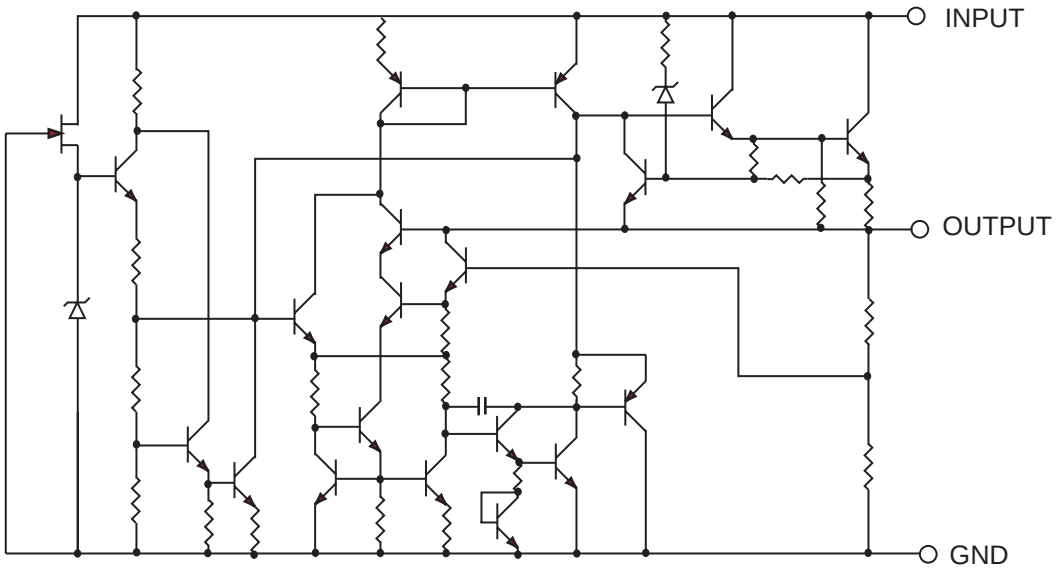
4.16 NJM78M05FA (IC931) : Regulator

- Terminal layout



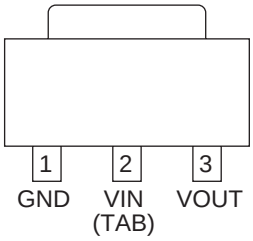
1.INPUT
2.GND
3.OUTPUT

- Block diagram

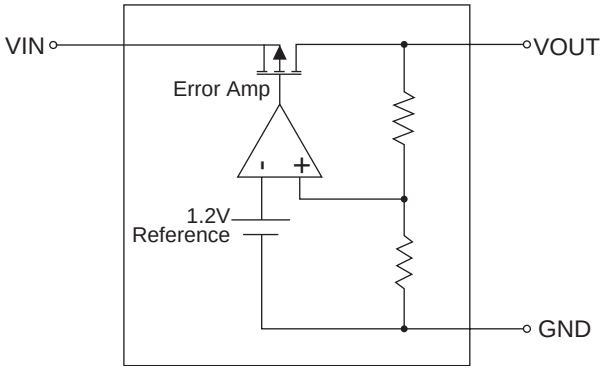


4.17 RT9161 / A-27CG-X (IC105) : Regulator

- Pin layout



- Block diagram

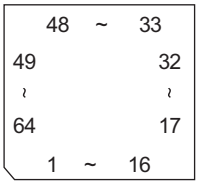


- Pin function

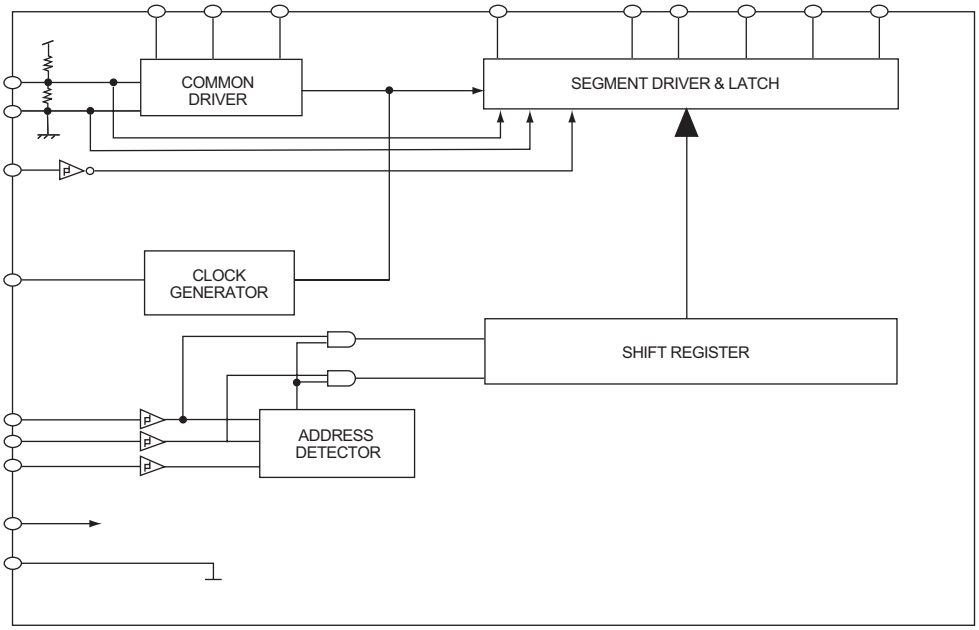
Pin Name	Function
VOUT	Output Voltage
GND	Ground
VIN	Power Input

4.18 PT6523LQ (IC601) : LCD driver

- Pin layout



- Block diagram



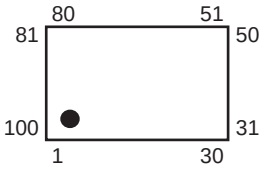
- Piin function

Pin No.	Pin Name	I/O	Description
1~ 52	SG1 ~ SG52	O	Segment Output Pins
53~55	COM1 ~ COM3	O	Common Driver Output Pins
56	VDD	-	Power Supply
57	$\overline{INH}$	I	Display OFF Control Input Pin When this pin is "Low", the Display is forcibly turned OFF. (SG1 to SG52, COM1 to COM3 are set to "LOW"). (See Note 1) When this pin is set to "High", the Displa is ON.
58	VDD1	I	Used for the 2/3 Bias Voltage when the Bias Voltages are provied externally. Connect to VDD2 when 1/2 Bias is used.
59	VDD2	I	Used for 1/3 Bias Voltage when the Bias Voltages are provided externally. Connect to VDD1 when 1/2 Bias is used.
60	VSS	-	Ground Pin.
61	OSC	I/O	Oscillation Input /Outout Pin
62	CE	I	Chip Enable Pin
63	CLK	I	Synchronization Clock
64	DI	I	Transfer Data Pin

Note 1:
When $\overline{INH}$ = "LOW" : Serial data trensfers can be performed when the display is forcibly OFF.

4.19 UPD178078GF-642 (IC801) : System CPU

- Pin Layout



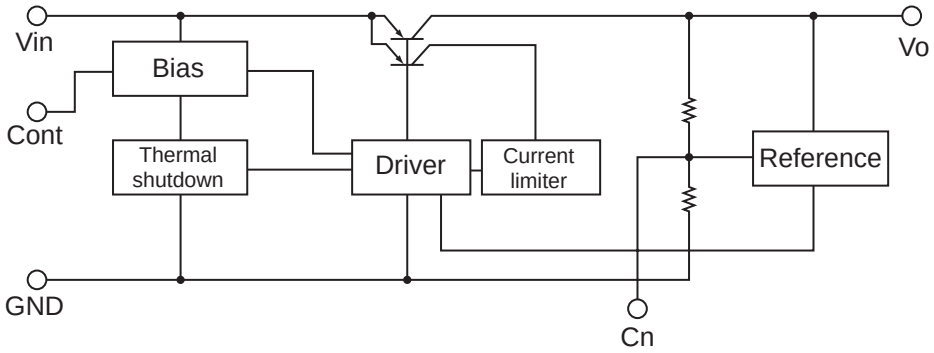
- Pin function

Pin No.	Symbol	I/O	Function
1 to 8	NC	-	Not connect
9	E.VOL.DATA_OUT	O	E.VOLUME data output
10	E.VOL.SCK	O	E.VOLUME clock output
11	NC	-	Not connect
12	LCD SO	O	LCD data output
13	LCD SCK	O	LCD driver clock output
14	MECHA POWER	O	Linked with MECHA ON
15	LCD CE	O	LCD driver chip enable signal output
16 to 18	NC	-	Not connect
19	ENC1	I	Rotary volume signal A input
20	ENC2	I	Rotary volume signal B input
21,22	NC	-	Not connect
23	KEY0	I	Key input 1
24	KEY1	I	Key input 2
25	KEY2	I	Key input 3
26 to 29	AVDD	-	Power supply for A/D converter (Connect to VDD)
30	LEVEL IND	I	Level meter A/D input
31	SM	I	S meter (electric field strength) input
32	AVSS	-	Ground for A/D converter (Connect to ground)
33	REGCPU	-	Regulator for CPU power supply
34	VDD	-	Power supply
35	REGOSC	-	Power supply for oscillator circuit
36	XOUT	O	Crystal oscillator connect terminal for system clock
37	XIN	I	Crystal oscillator connect terminal for system clock
38	GND	-	Connect to ground
39	IFCCONT	O	IFC output prohibition signal
40	GND	-	Connect to ground
41	NC	-	Not connect
42	IF COUNT	I	FM/AM IF count signal input
43	VDDPLL	-	Connect to VDD
44	OSC IN	I	FM/AM local oscillation signal input
45	NC	-	Not connect
46	GNDPLL	-	Connect to ground
47	EQ	O	PLL error signal output
48	NC	-	Not connect
49	VPP	-	Connect to ground through the resistor
50	RESET	I	Main micon reset input
51	REMOCON	I	Optical remocon signal input
52	NC	-	Not connect
53	MECHA.RESET	O	CD micon reset signal output
54 to 65	NC	-	Not connect

Pin No.	Symbol	I/O	Function
66	VIDEO ON/OFF	O	L: VIDEO OFF, H: VIDEO ON
67	BAND	O	Tuner receive band switching signal (H: FM, L: AM)
68	NC	-	Not connect
69	RXD0	I	For flash ROM writing / UART(VCD status input)
70	TXD0	O	For flash ROM writing / UART(VCD command output)
71	SD/ST	I	Station detection / FM stereo input
72	/MONO	O	FM monaural control output
73	IF/AGC	O	IF count request output
74	NC	-	Not connect
75	ANT.REMOTE	O	Antenna remote control output (H: tuner)
76	PARKING BRAKE	I	L: VIDEO OFF, H: VIDEO ON
77	NC	-	Not connect
78	SW1	I/O	S1 input, Disc insert detection on power OFF
79	P.SAVE1	I	Power save 1(ACC) detection, L: Power save
80	P.SAVE2	I	Power save 2(BATTERY) detection, L: Power save
81	P.SAVE.SLAVE	O	Power save 1 control signal output to mecha micon
82	GND	-	Connect to ground
83 to 91	NC	-	Not connect
92	MUTE	O	Mute control signal output
93	TEL MUTING	I	Tel muting input
94	POWER CONT	O	Power supply IC control signal output
95 to 97	NC	-	Not connect
98	DETACH	I	Panel connector detection
99	VDDPORT	-	Connect to VDD
100	GNDPORT	-	Connect to ground

4.20 MM1565AF-X (IC108, IC261, IC551) : Regulator

• Block diagram

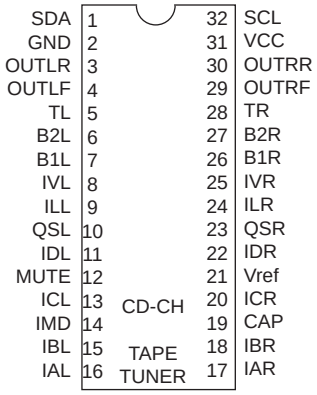


• Pin function

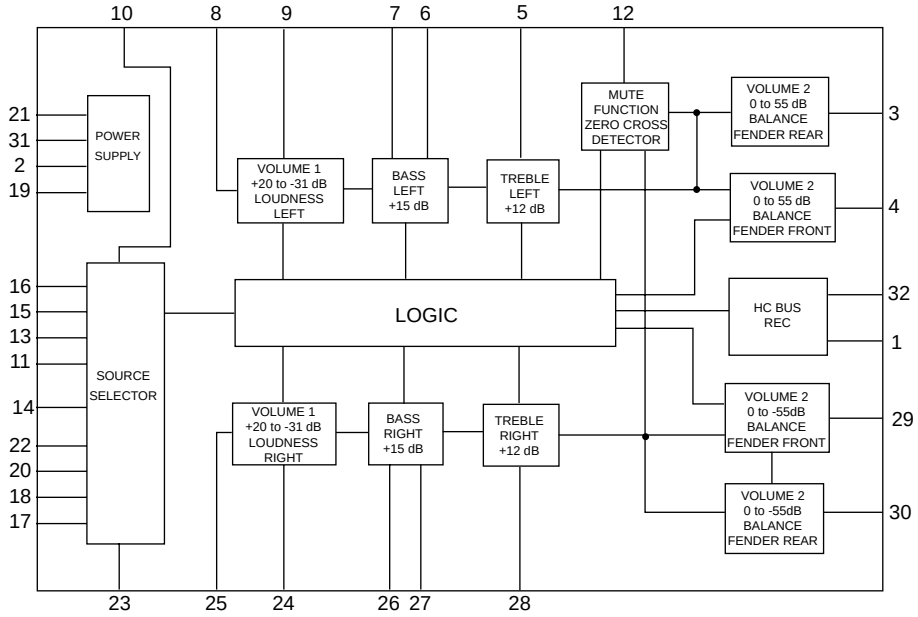
Pin No.	Symbol	Function
1	Vout	Output terminal
2	NC	Non connect
3	GND	Connect to ground
4	Cn	Noise decrease terminal
5	Cout	Control terminal
6	Sub	Substrate (Connect to ground)
7	Vin	Input terminal

4.21 TEA6320T-X (IC301) : E.volume

- Pin layout



- Block diagram



- Pin functions

Pin No.	Symbol	I/O	Functions
1	SDA	I/O	Serial data input/output.
2	GND	-	Ground.
3	OUTLR	O	output left rear.
4	OUTLF	O	output left front.
5	TL	I	Treble control capacitor left channel or input from an external equalizer.
6	B2L	-	Bass control capacitor left channel or output to an external equalizer.
7	B1L	-	Bass control capacitor left channel.
8	IVL	I	Input volume 1. left control part.
9	ILL	I	Input loudness. left control part.
10	QSL	O	Output source selector. left channel.
11	IDL	-	Not used
12	MUTE	-	Not used
13	ICL	I	Input C left source.
14	IMO	-	Not used
15	IBL	I	Input B left source.
16	IAL	I	Input A left source.

Pin No.	Symbol	I/O	Functions
17	IAR	I	Input A right source.
18	IBR	I	Input B right source.
19	CAP	-	Electronic filtering for supply.
20	ICR	I	Input C right source.
21	Vref	-	Reference voltage (0.5Vcc)
22	IDR	-	Not used
23	QSR	O	Output source selector right channel.
24	ILR	I	Input loudness right channel.
25	IVR	I	Input volume 1. right control part.
26	B1R	-	Bass control capacitor right channel
27	B2R	O	Bass control capacitor right channel or output to an external equalizer.
28	TR	I	Treble control capacitor right channel or input from an external equalizer.
29	OUTRF	O	Output right front.
30	OUTRR	O	Output right rear.
31	Vcc	-	Supply voltage.
32	SCL	I	Serial clock input.

JVC
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(No.49837)

Printed in Japan
WPC

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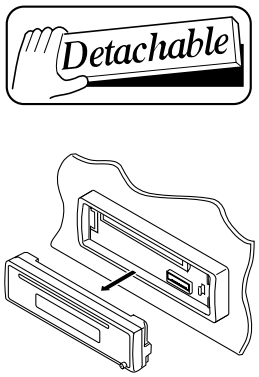
SCHEMATIC DIAGRAMS

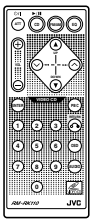
VCD/CD RECEIVER

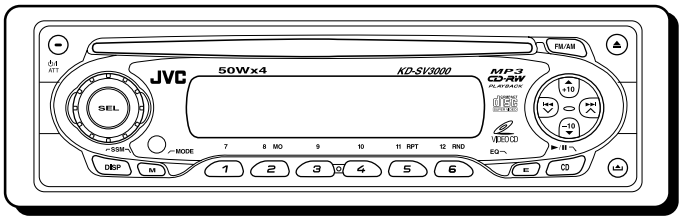
KD-SV3000

CD-ROM No.SML200306

Area Suffix
U ---------- Other Areas







COMPACT disc DIGITAL VIDEO

MP3 CD-RW PLAYBACK

VIDEO CD

Contents

Block diagram ---------- 2-1
Standard schematic diagrams ---------- 2-2
Printed circuit boards ---------- 2-6,7

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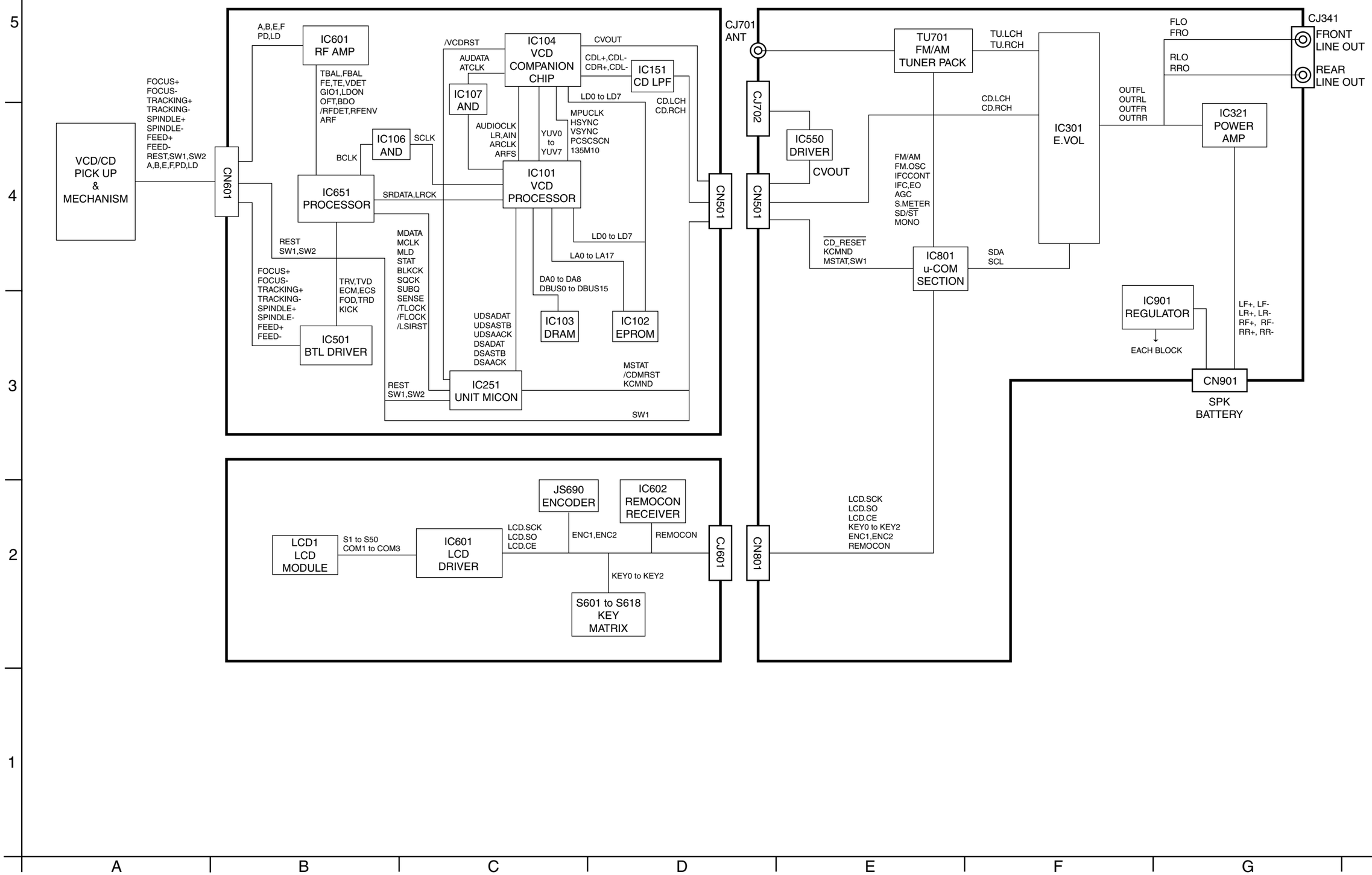
No.49837SCH
2003/06

Safety precaution

⚠ ***CAUTION*** **Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.**

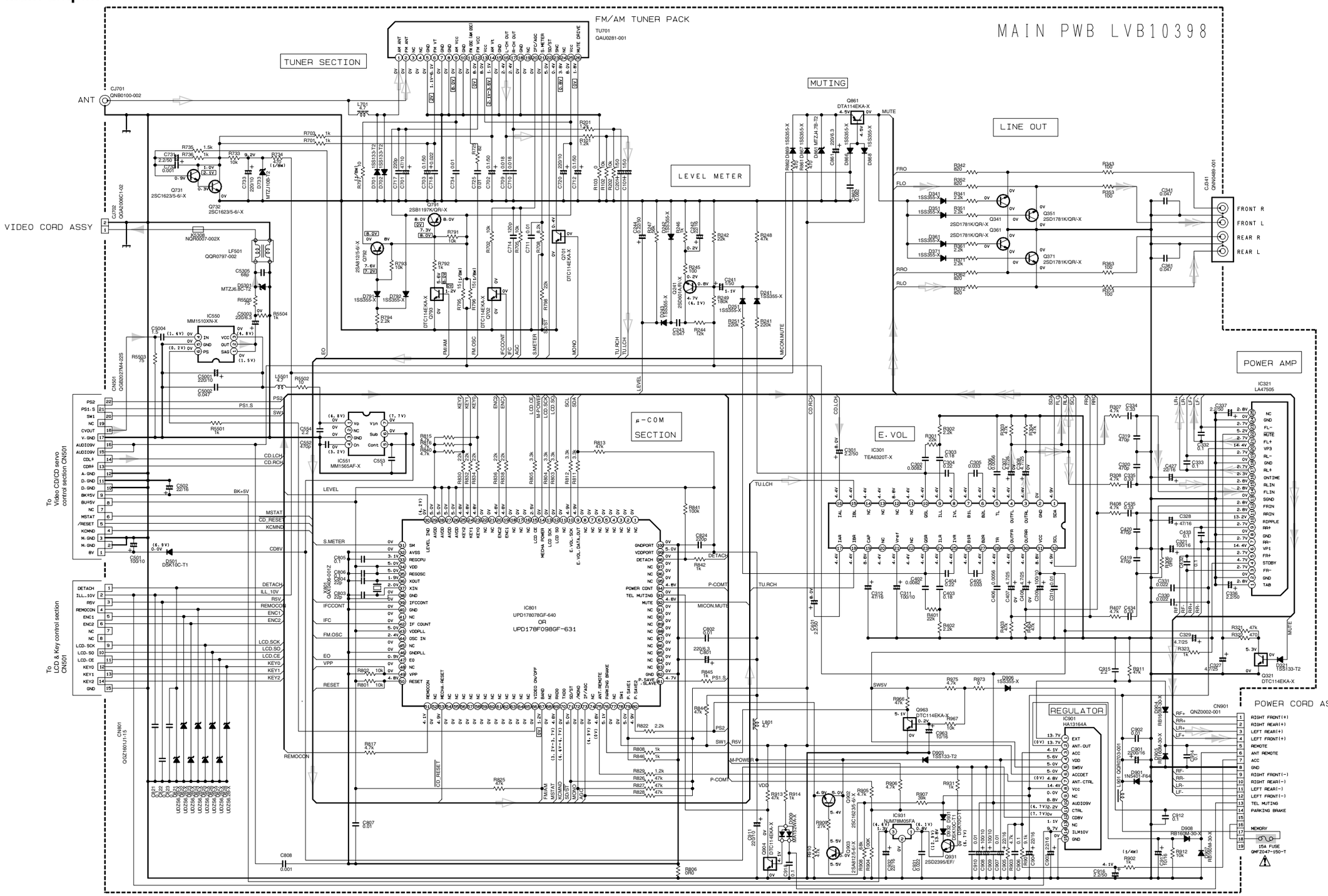
⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

Block diagram



Standard schematic diagrams

■ Main amplifier section



⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

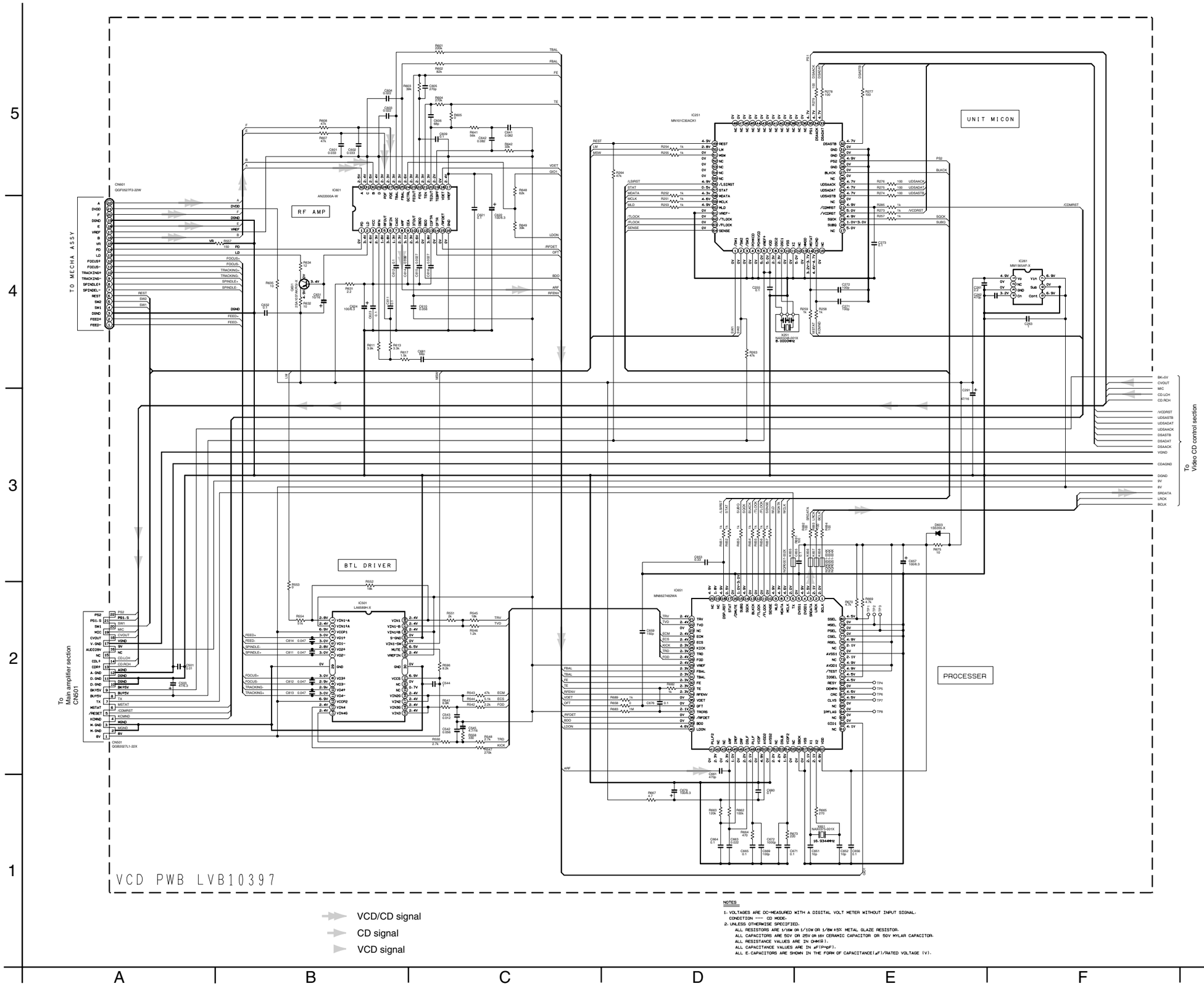
Tuner signal
CD signal
VCD signal
Front signal
Rear signal

NOTES

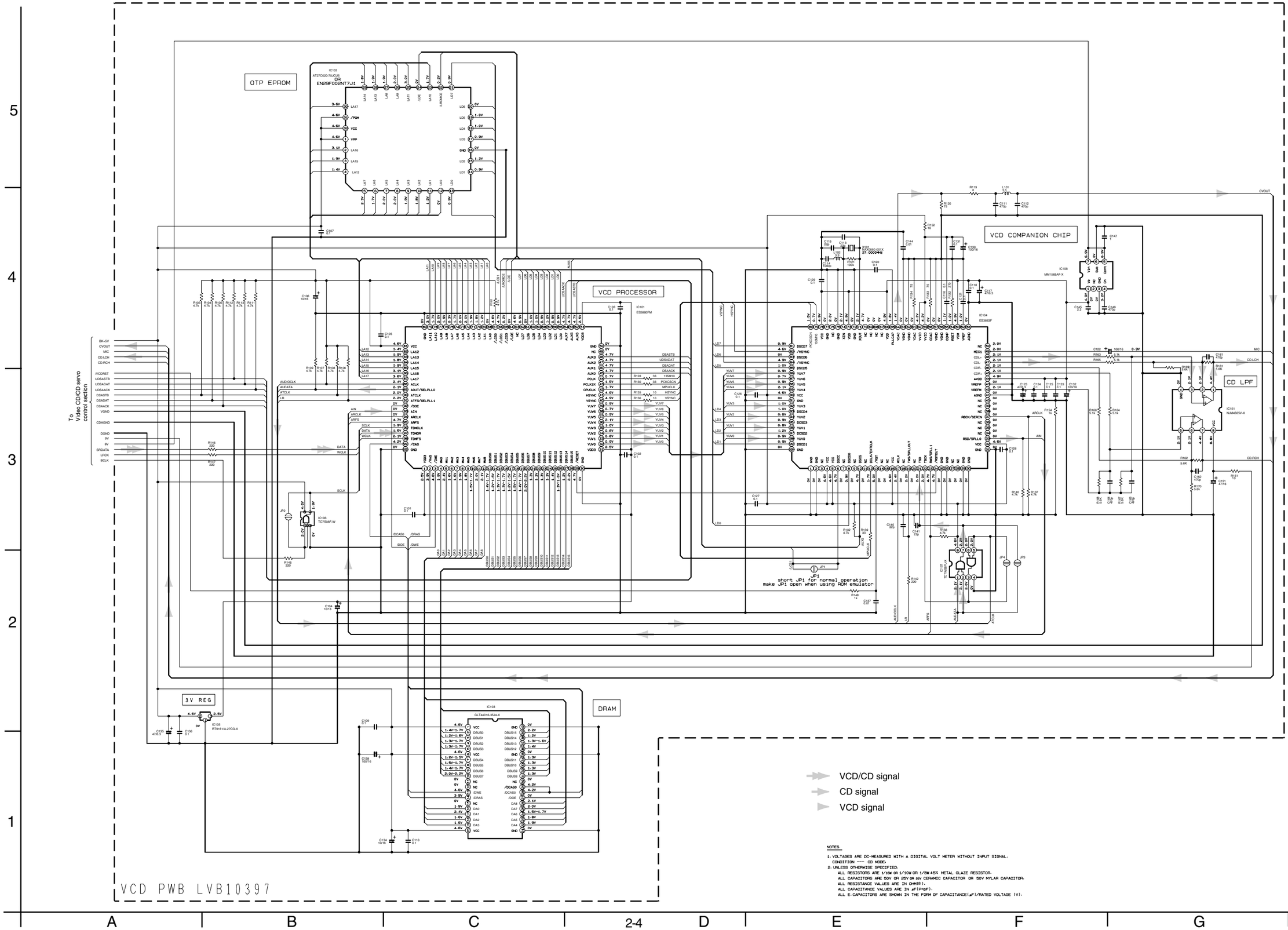
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL. CONDITION ---- FM MODE, ▭ AM MODE, ( ) CD MODE.

2. UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS ARE 1/16W OR 1/10W OR 1/8W ±5% METAL GLAZE RESISTOR.
ALL CAPACITORS ARE 50V OR 25V OR 16V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR.
ALL RESISTANCE VALUES ARE IN OHM(Ω).
ALL CAPACITANCE VALUES ARE IN μF(=pF).
ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V).
MY--- MYLAR CAPACITOR

■ Video CD/CD servo control section



■ Video CD control section



NOTES

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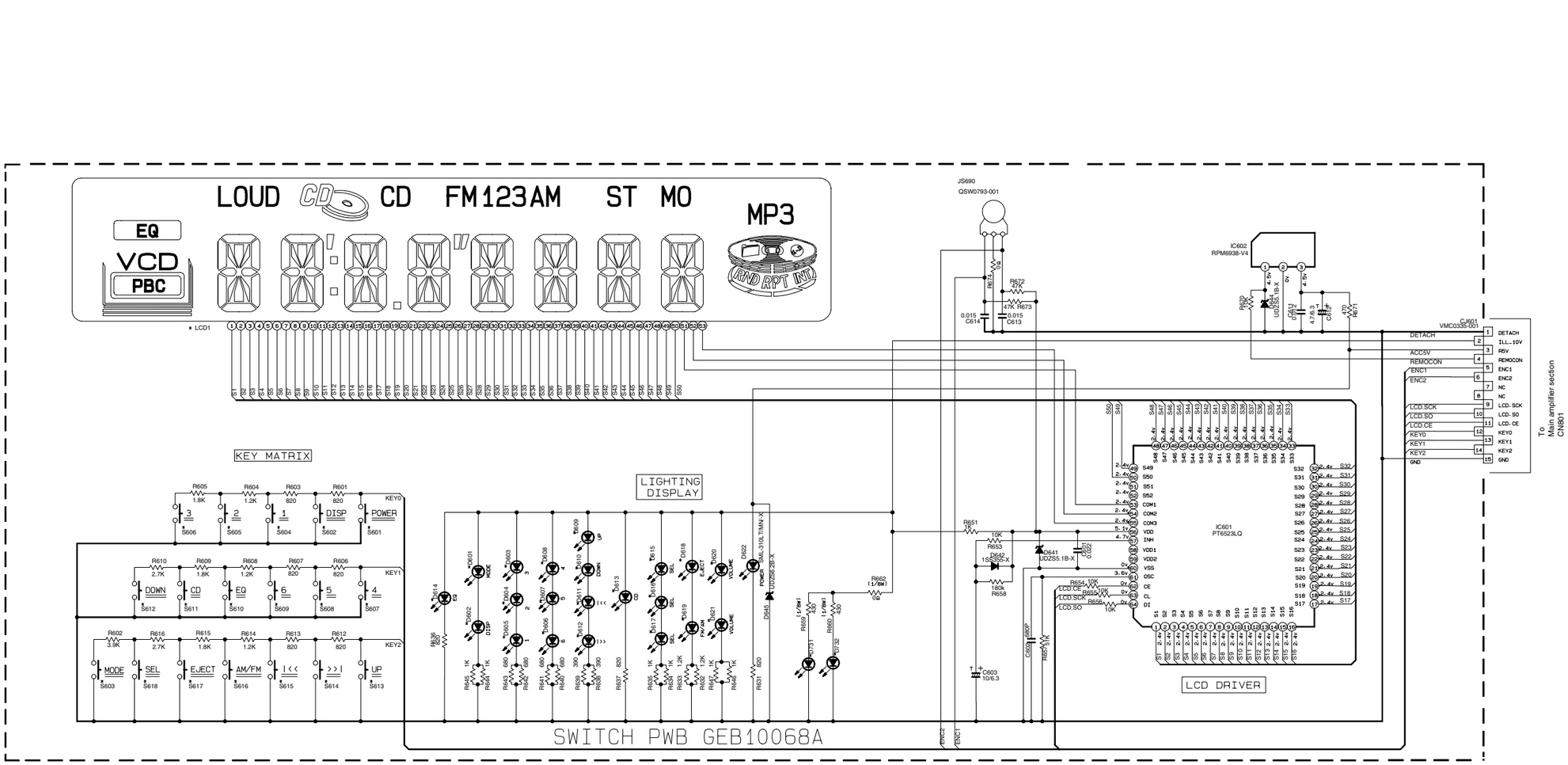
   CONDITION ←— CD MODE.
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/16W OR 1/10W OR 1/8W ±5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V OR 25V OR 16V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR.
   ALL RESISTANCE VALUES ARE IN Ω(KΩ).
   ALL CAPACITANCE VALUES ARE IN μF(P=pF).
   ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V).

■ LCD & Key control section



FRONT CIRCUIT BOARD SECTION

*REMARKS

REF NAME \ MODEL	KD-SV2800	KD-SV3000
D731 D732	WHITE NSPW310BS/BRS/	WHITE NSPW310BS/BRS/
D601-D621	SML-310VT/JK/-X	SML-310VT/JT/-X
S601-S618	NSW0124-001X	NSW0124-001X
LCD1	GLD0286-001	DLD0279-001

NOTES

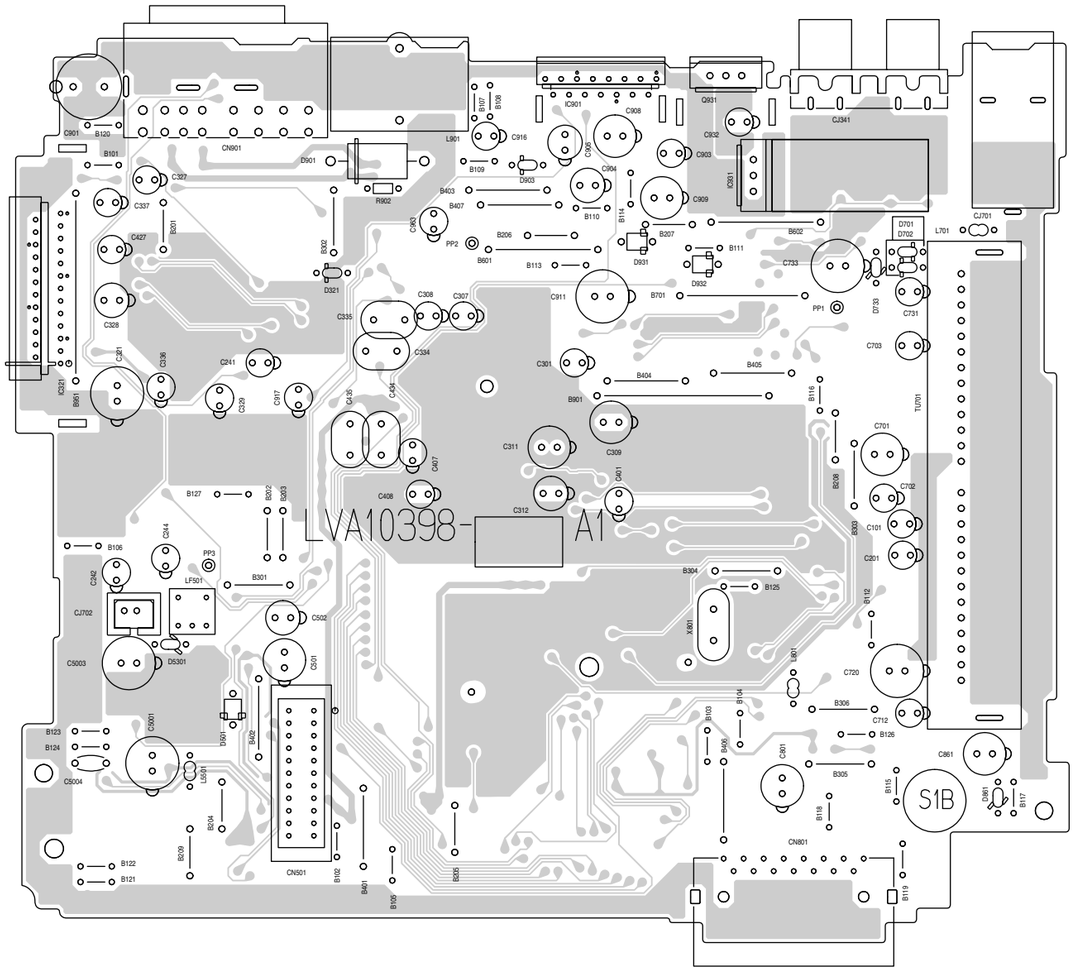
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.

2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTOR ARE 1/16W ±5% METAL GLAZE RESISTOR.
   ALL CAPACITORS ARE 50V OR 25V CERAMIC CAPACITOR.
   ALL RESISTANCE VALUES ARE IN OHM.
   ALL CAPACITANCE VALUES ARE IN uF(P=pF)
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(uF)/RATED VOLTAGE(V)
   T --- TANTAL CAPACITOR

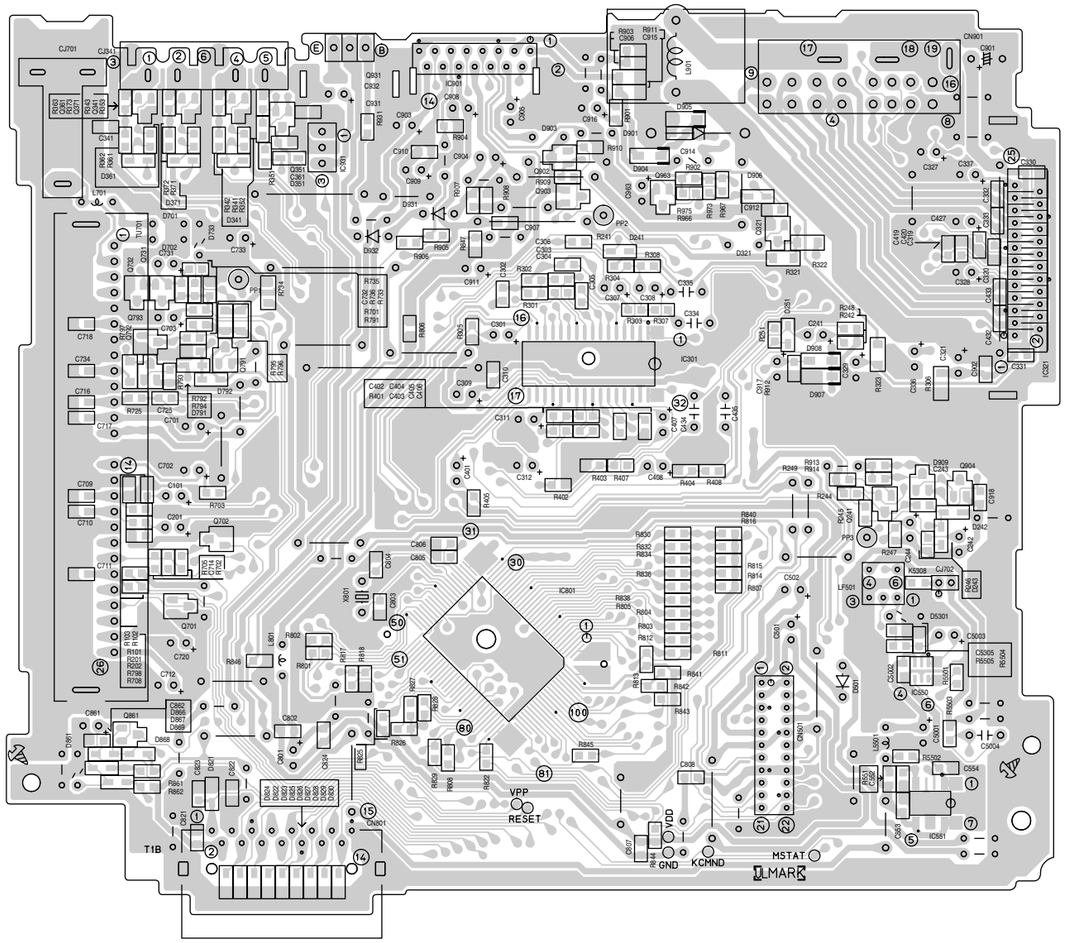
Printed circuit boards

■ Main board

Forward side

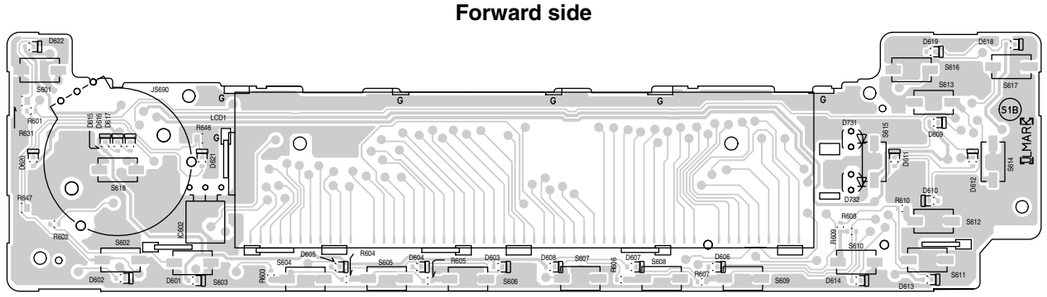


Reverse side

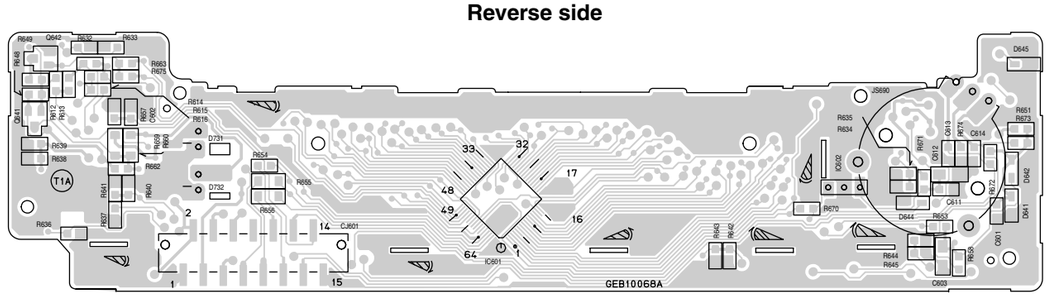


■ Front board

Forward side

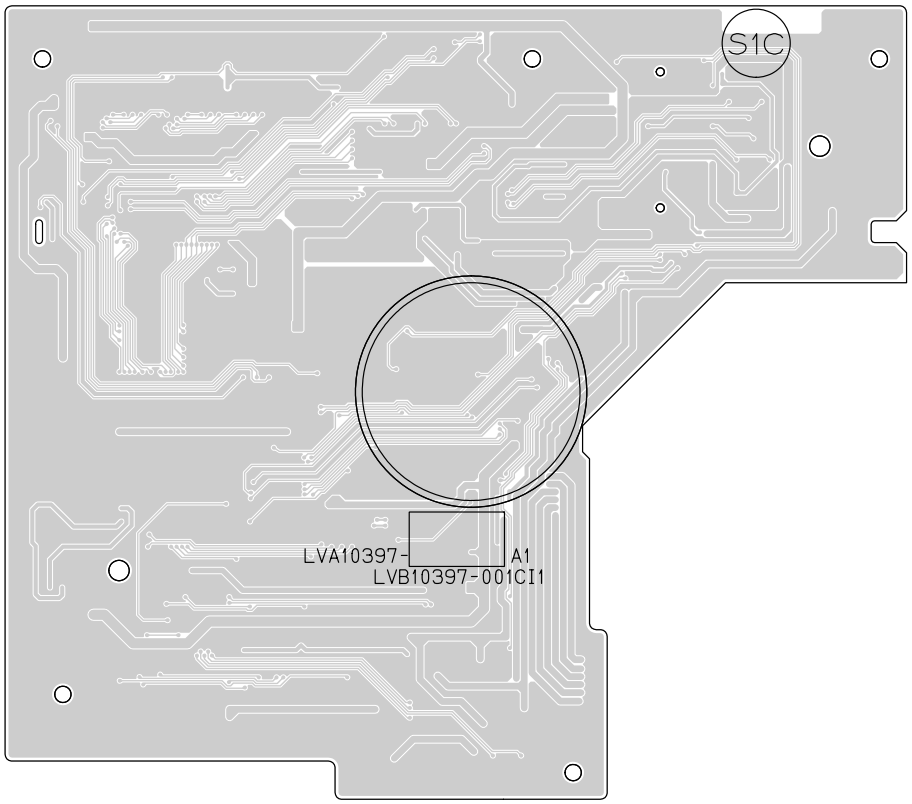


Reverse side

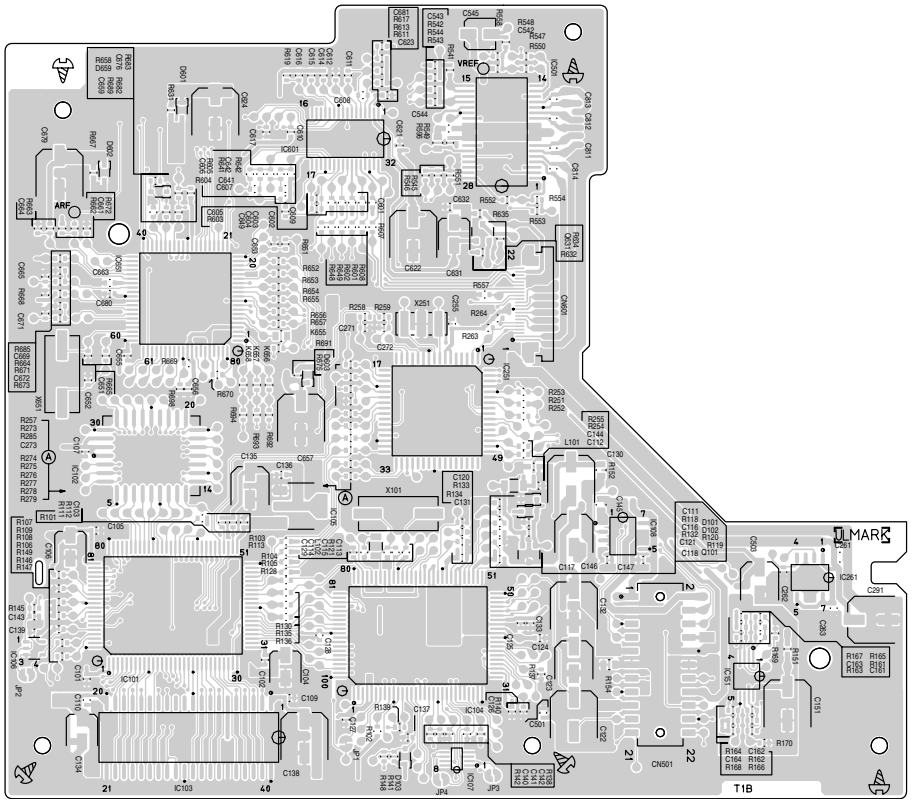


■ VCD/CD mechanism board

Forward side



Reverse side



KD-SV3000

JVC

VICTOR COMPANY OF JAPAN, LIMITED

AV & MULTIMEDIA COMPANY 10-1,1Chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

(No.49837SCH)

Printed in Japan
2003/06

PARTS LIST

[KD-SV3000]

* All printed circuit boards and its assemblies are not available as service parts.

Area suffix

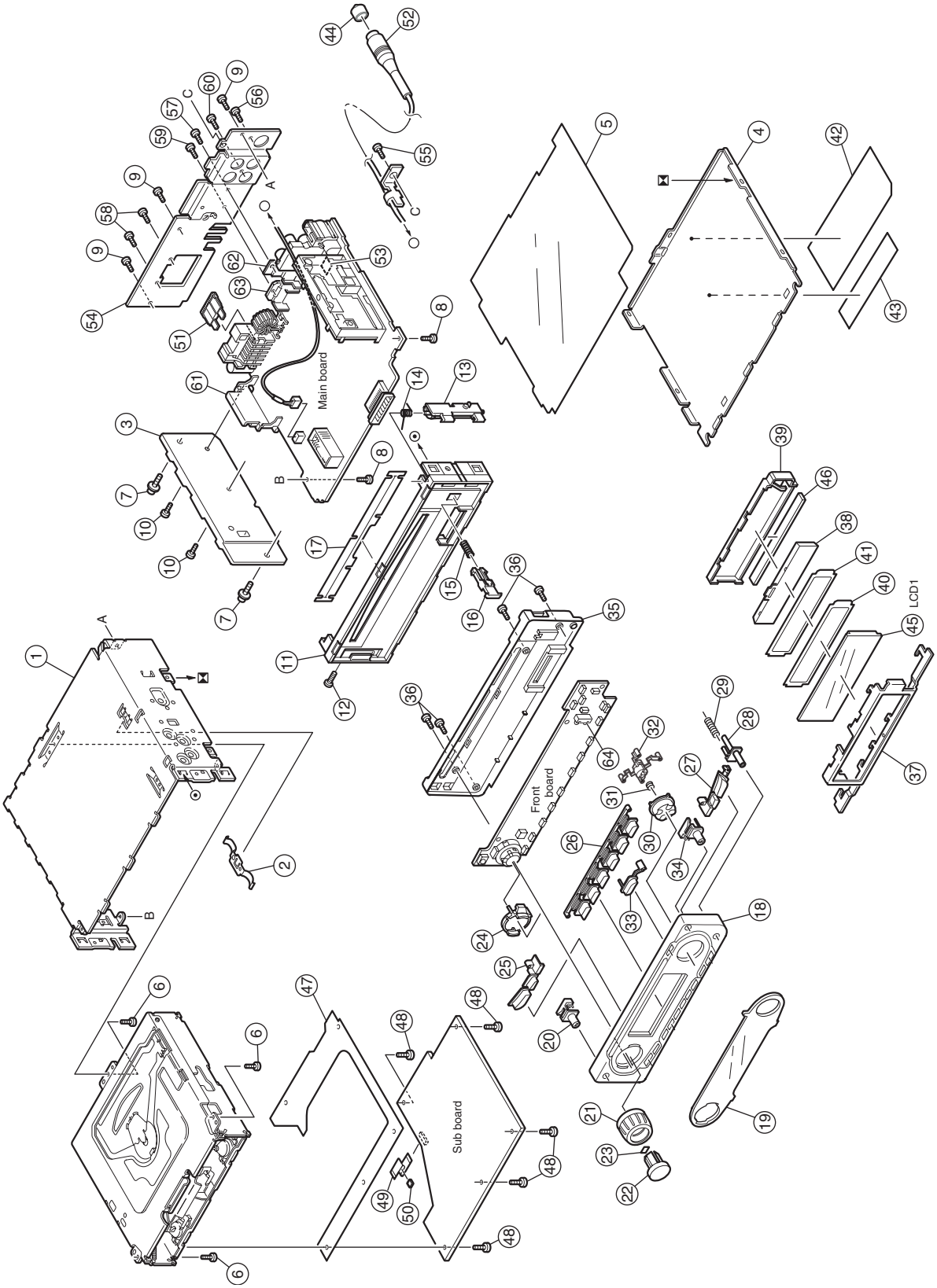
U ---------- Other Areas

- Contents -

Exploded view of general assembly and parts list (Block No.M1) ---------- 3- 2
CD mechanism assembly and parts list (Block No.MB) ---------- 3- 4
Electrical parts list (Block No.01~03) ---------- 3- 6
Packing materials and accessories parts list (Block No.M3) ---------- 3-12

Exploded view of general assembly and parts list

Block No. M 1 M M



General assembly

Block No. [M][1][M][M]

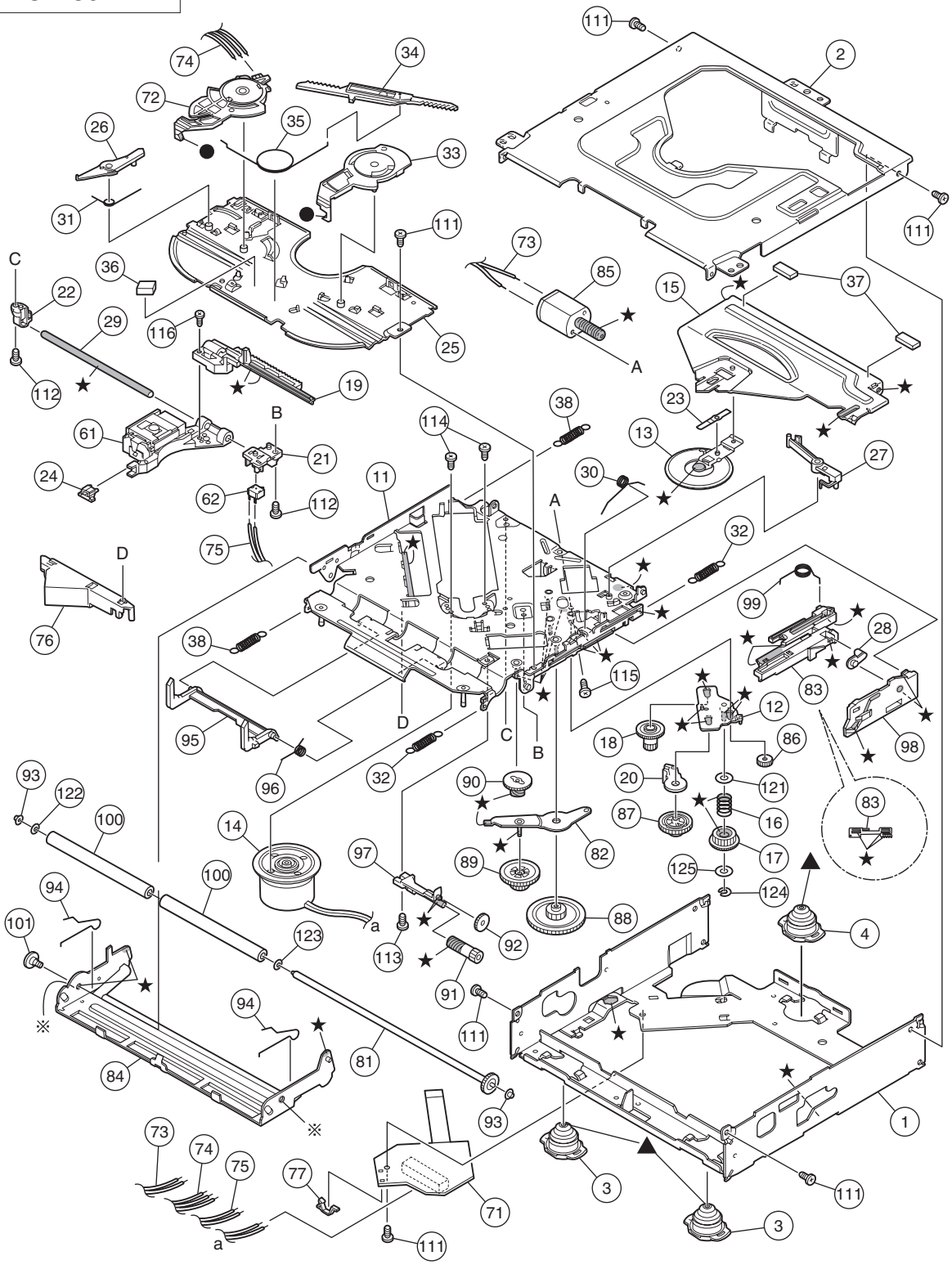
⚠ Symbol No.	Part No.	Part Name	Description	Local
1	GE10043-210A	TOP CHASSIS		
2	GE40135-001A	EARTH PLATE		
3	GE30938-003A	HEAT SINK		
4	GE30393-002A	BOTTOM COVER		
5	FSMA3004-203	INSULATOR		
6	QYSDST2604Z	SCREW	2.6mm x 4mm(x3)	
7	FSKZ4005-001	SCREW	(x2)	
8	QYSDST2606Z	SCREW	2.6mm x 6mm(x2)	
9	QYSDST2604Z	SCREW	2.6mm x 4mm(x3)	
10	QYSDST2612Z	SCREW	2.6mm x 12mm(x2)	
11	GE10056-001A	FRONT CHASSIS		
12	QYSDST2004M	MINI SCREW	2mm x 4mm	
13	GE30583-001A	LOCK LEVER		
14	FSKW4005-003	TORSION SPRING		
15	FSKW3002-015	COMP.SPRING		
16	FSXP3026-002	RLS KNOB		
17	GE40140-001A	BLIND		
18	GE10057-002A	FRONT PANEL		
19	GE30802-016A	FINDER ASSY		
20	GE30105-002B	POWER BUTTON		
21	GE30815-002A	VOLUME KNOB		
22	GE30816-002A	SEL BUTTON		
23	FSYH4036-053	SHEET		
24	GE30817-001A	RIM LENS		
25	GE30811-002A	PUSH BUTTON		
26	GE20143-001A	PRESET BUTTON		
27	GE30814-007A	D. FUNC BTN DOW		
28	GE30807-001A	DETACH BUTTON		
29	FSKW3002-012	COMP.SPRING		
30	GE30818-001A	NAVI BUTTON		
31	GE40127-002A	COMP SPRING		
32	GE30819-001A	NAVI BASE		
33	GE30813-001A	D.FUNC BTN UP		
34	GE30803-001A	EJECT BUTTON		
35	GE10058-004A	REAR COVER		
36	VKZ4777-001	MINI SCREW	(x4)	
37	GE30804-002A	LCD CASE		
38	GE30805-001A	LCD LENS		
39	GE30806-001A	LENS CASE		
40	GE40150-006A	LIGHTING SHEET		
41	GE40150-001A	LIGHTING SHEET		
42	LV34198-001A	NAME PLATE		
43	LV41843-001A	LASER CAUTION		
44	GE40101-001A	PIN CAP		
45	QLD0279-001	LCD MODULE		
46	QNZ0442-001	LCD CONNECTOR		
47	LV43385-001A	INSULATOR		
48	QYSDST2004Z	SCREW	2mm x 4mm(x5)	
49	QUQ105-2207AE	FFC WIRE		
50	PU59915-105	SPECER		
⚠ 51	QMFZ047-150-T	FUSE	15A	
52	QAM0460-001	CAR CABLE		
53	PU59915-105	SPECER		
54	GE30912-009A	REAR BRACKET		
55	QYSDST2606Z	SCREW	2.6mm x 6mm	
56	QYSDST2606Z	SCREW	2.6mm x 6mm	
57	QYSDST2606Z	SCREW	2.6mm x 6mm	
58	QYSDST2606Z	SCREW	2.6mm x 6mm(x2)	
59	QYSDST2606Z	SCREW	2.6mm x 6mm	
60	QYSDSF2606Z	SCREW	2.6mm x 6mm	
61	LV43415-001A	POWER IC BKT		
62	LV43377-001A	REG IC BKT		
63	GE40124-001A	REG BRACKET		
64	GE30854-001A	LED HOLDER		

CD mechanism assembly and parts list

Block No. M B M M

TN-2001-1013

Grease
★ TNG-87
※ GP-501MK
● CFD-005Z
▲ GP-501A



CD mechanism

Block No. [M][B][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
1	30320101T	FRAME		
2	30320102T	TOP COVER		
3	30320115T	DANPER F	(x2)	
4	30320116T	DANPER R		
11	303205505T	CHASSIS RIVET		
12	303205503T	CHANGE P. RVT A		
13	303205301T	CLAMPER ASSY		
14	303205304T	SPINDLE MOTOR A		
15	30320502T	CLAMPER ARM		
16	30320503T	CHANGE GEAR SPG		
17	30320505T	CHANGE GEAR 2		
18	30320506T	FEED GEAR		
19	30320507T	FEED RACK		
20	30320509T	CHANGE LOCK RAR		
21	30320510T	FEED SW HOLDER		
22	30320511T	PU SHAFT HOLDER		
23	30320513T	CLAMPER SUB SPG		
24	30320514T	FD SUB HOLDER		
25	30320518T	TOP PLATE		
26	30320519T	SELECT LOCK ARM		
27	30320520T	TRIGGER ARM		
28	30320521T	SLIDE HOOK		
29	30320522T	PU SHAFT		
30	30320525T	CLAMPER ARM SPG		
31	30320526T	SELECT L ARM SP		
32	30320538T	SUSPENSION SP R	(x2)	
33	30320529T	SELECT ARM R		
34	30320530T	LINK PLATE		
35	30320531T	LINK PLATE SPG		
36	30320523T	CUSHION F		
37	30320524T	CUSHION R	(x2)	
38	30320539T	SUSPENSION SP L	(x2)	
61	69011614T	PICKUP OPT-725		
62	64180406T	DET SW ESE22		
71	303210302T	CONN BOARD ASSY		
72	30321002T	MODE SW		
73	30321003T	LOAD MOTOR WIRE		
74	30321005T	MODE SW WIRE		
75	30321009T	SL WIRE		
76	30321011T	WIRE HOLDER		
77	19501403T	WIRE CLUMPER		
81	303211301T	ROLLER SHAFT AS		
82	303211501T	L GEAR PLATE RV		
83	303211302T	LOADING PLATE A		
84	303211502T	LOCK ARM RV ASS		
85	303211303T	L/F MOTOR ASSY		
86	30321101T	LOADING GEAR 1		
87	30321102T	LOADING GEAR 2		
88	30321103T	LOADING GEAR 3		
89	30321104T	LOADING GEAR 4		
90	30321105T	LOADING GEAR 5		
91	30321106T	LOADING GEAR 6		
92	30321107T	LOADING GEAR 7		
93	30321111T	ROLLER GUIDE	(x2)	
94	30321114T	ROLLER GUIDE SP	(x2)	
95	30321116T	DISC STOPPER AR		
96	30321117T	DISC ST ARM SPG		
97	30321118T	LD GEAR BRACKET		
98	30321125T	L SIDE PLATE		
99	30321131T	LOAD PLATE SPG		
100	30321133T	LDG ROLLER	(x2)	
101	18211223T	COLLAR SCREW		
111	9P0420031T	SCREW	(x6)	
112	9P0420041T	TAP.SCREW	(x2)	
113	9B0320041T	SCREW		
114	9C0117183T	SCREW	(x2)	
115	9C0120203T	SCREW		
116	9C0317503T	SCREW		
121	9W0130170T	PW 3.5X8X0.3		
122	9W0513060T	HL WASHER		
123	9W0710070T	L WASHER		
124	9E0100152T	E RING		
125	9W0113020T	PW 2.1X4X0.13		

Electrical parts list

Main board

Block No. [0][1][0][0]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC301	TEA6320T-X	IC		
IC321	LA47505	IC		
IC550	MM1510XN-X	IC		
IC551	MM1565AF-X	IC	5.0V Regulator	
IC801	UPD178078GF-642	IC		
IC901	HA13164A	IC		
IC931	NJM78M05FA	IC		
Q241	2SD601A/R/-X	TRANSISTOR		
Q321	DTC114EKA-X	TRANSISTOR		
Q351	2SD1781K/QR/-X	TRANSISTOR		
Q361	2SD1781K/QR/-X	TRANSISTOR		
Q371	2SD1781K/QR/-X	TRANSISTOR		
Q701	DTC114EKA-X	TRANSISTOR		
Q702	DTC114EKA-X	TRANSISTOR		
Q731	2SC1623/5-6/-X	TRANSISTOR		
Q732	2SC1623/5-6/-X	TRANSISTOR		
Q791	2SB1197K/QR/-X	TRANSISTOR		
Q792	2SA812/5-6/-X	TRANSISTOR		
Q793	DTC114EKA-X	TRANSISTOR		
Q861	DTA114EKA-X	DIGI TRANSISTOR		
Q902	2SC1623/5-6/-X	TRANSISTOR		
Q903	2SA812/5-6/-X	TRANSISTOR		
Q904	DTC114EKA-X	TRANSISTOR		
Q931	2SD2395/EF/	TRANTRANSISTOR		
Q963	DTC114EKA-X	TRANSISTOR		
D241	1SS355-X	SI DIODE		
D242	1SS355-X	SI DIODE		
D243	1SS355-X	SI DIODE		
D251	1SS355-X	SI DIODE		
D321	1SS133-T2	DIODE		
D341	1SS355-X	SI DIODE		
D351	1SS355-X	SI DIODE		
D361	1SS355-X	SI DIODE		
D371	1SS355-X	SI DIODE		
D501	DSK10C-T1	DIODE		
D701	1SS133-T2	DIODE		
D702	1SS133-T2	DIODE		
D733	MTZJ10B-T2	Z DIODE		
D791	1SS355-X	SI DIODE		
D792	1SS355-X	SI DIODE		
D821	UDZS6.2B-X	Z DIODE		
D822	UDZS6.2B-X	Z DIODE		
D823	UDZS6.2B-X	Z DIODE		
D824	UDZS6.2B-X	Z DIODE		
D825	UDZS6.2B-X	Z DIODE		
D826	UDZS6.2B-X	Z DIODE		
D827	UDZS6.2B-X	Z DIODE		
D828	UDZS6.2B-X	Z DIODE		
D861	MTZJ4.7B-T2	Z DIODE		
D866	1SS355-X	SI DIODE		
D867	1SS355-X	SI DIODE		
D868	1SS355-X	SI DIODE		
D869	1SS355-X	SI DIODE		
D901	1N5401-F64	DIODE		
D903	1SS133-T2	DIODE		
D904	RB160M-30-X	SB DIODE		
D905	RB160M-30-X	SB DIODE		
D906	1SS355-X	SI DIODE		
D907	RB160M-30-X	SB DIODE		
D908	RB160M-30-X	SB DIODE		
D909	MA152WA-X	DIODE		
D931	DSK10C-T1	DIODE		
D932	DSK10C-T1	DIODE		
D5301	MTZJ6.8C-T2	Z DIODE		
C101	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C201	QERF1HM-105Z	E CAPACITOR	1uF 50V M	
C241	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
C242	QEKJ1CM-226Z	E CAPACITOR	22uF 16V M	
C243	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C244	QEKJ1HM-224Z	E CAPACITOR	0.22uF 50V M	
C301	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C302	NCB31HK-822X	C CAPACITOR	8200pF 50V K	
C303	NCB31AK-184X	C CAPACITOR	0.18uF 10V K	
C304	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C305	NCB21EK-333X	C CAPACITOR	0.033uF 25V K	
C306	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C307	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C308	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C309	QEKJ1AM-107Z	E CAPACITOR	100uF 10V M	
C310	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C311	QEKJ1AM-107Z	E CAPACITOR	100uF 10V M	
C312	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M	
C319	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C320	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C321	QERF1CM-107Z	E CAPACITOR	100uF 16V M	
C327	QEKJ1EM-475Z	E CAPACITOR	4.7uF 25V M	
C328	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M	
C329	QEKJ1EM-475Z	E CAPACITOR	4.7uF 25V M	
C330	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C331	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C332	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C333	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C334	QFV61HJ-334Z	MF CAPACITOR	0.33uF 50V J	
C335	QFV61HJ-334Z	MF CAPACITOR	0.33uF 50V J	
C336	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C337	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C361	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C401	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C402	NCB31HK-822X	C CAPACITOR	8200pF 50V K	
C403	NCB31AK-184X	C CAPACITOR	0.18uF 10V K	
C404	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C405	NCB21EK-333X	C CAPACITOR	0.033uF 25V K	
C406	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C407	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C408	QERF1EM-475Z	E CAPACITOR	4.7uF 25V M	
C419	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C420	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C427	QEKJ1CM-226Z	E CAPACITOR	22uF 16V M	
C432	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C433	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C434	QFV61HJ-334Z	MF CAPACITOR	0.33uF 50V J	
C435	QFV61HJ-334Z	MF CAPACITOR	0.33uF 50V J	
C501	QERF1AM-107Z	E CAPACITOR	100uF 10V M	
C502	QERF1CM-226Z	E CAPACITOR	22uF 16V M	
C552	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C553	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C554	NCB21AK-225X	C CAPACITOR	2.2uF 10V K	
C701	QERF1AM-476Z	E CAPACITOR	47uF 10V M	
C702	QEKJ1HM-104Z	E CAPACITOR	0.1uF 50V M	
C703	QERF1HM-104Z	E CAPACITOR	0.1uF 50V M	
C709	NCB31EK-183X	C CAPACITOR	0.018uF 25V K	
C710	NCB31EK-183X	C CAPACITOR	0.018uF 25V K	
C711	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C712	QEKJ1HM-104Z	E CAPACITOR	0.1uF 50V M	
C714	NDC31HJ-121X	C CAPACITOR	120pF 50V J	
C717	NCS31HJ-221X	C CAPACITOR	220pF 50V J	
C718	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	
C720	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C725	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C731	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C732	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C733	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C734	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C801	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C802	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C803	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C804	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C805	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C806	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C807	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C808	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C821	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C822	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C823	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C824	NCB31HK-221X	C CAPACITOR	220pF 50V K	
C861	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C862	NCB31EK-823X	C CAPACITOR	0.082uF 25V K	
C901	QEZ0337-228	E CAPACITOR	2200uF	
C902	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C903	QEKJ1CM-226Z	E CAPACITOR	22uF 16V M	
C904	QERF1CM-226Z	E CAPACITOR	22uF 16V M	
C905	QERF1CM-226Z	E CAPACITOR	22uF 16V M	
C906	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C907	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C908	QERF1AM-107Z	E CAPACITOR	100uF 10V M	
C909	QERF1AM-107Z	E CAPACITOR	100uF 10V M	
C910	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C911	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C912	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C914	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C915	NCB11CK-225X	C CAPACITOR	2.2uF 16V K	
C916	QERF1HM-225Z	E CAPACITOR	2.2uF 50V M	
C917	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C918	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C931	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C932	QEKJ1CM-226Z	E CAPACITOR	22uF 16V M	
C963	QERF1CM-106Z	E CAPACITOR	10uF 16V M	
C5001	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C5002	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C5003	QERF0JM-227Z	E CAPACITOR	220uF 6.3V M	
C5004	QCZ0202-155Z	C CAPACITOR	1.5uF 25V Z	
C5305	NDC31HJ-680X	C CAPACITOR	68pF 50V J	
R101	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R102	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R103	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R201	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R202	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R241	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J	
R242	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R244	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R245	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R246	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R247	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J	
R248	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R249	NRSA63J-184X	MG RESISTOR	180kΩ 1/16W J	
R251	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J	
R301	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R302	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R303	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R304	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R306	NRS181J-0R0X	MG RESISTOR	0Ω 1/8W J	
R307	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R308	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R321	NRS181J-473X	MG RESISTOR	47kΩ 1/8W J	
R322	NRS181J-471X	MG RESISTOR	470Ω 1/8W J	
R323	NRS181J-102X	MG RESISTOR	1kΩ 1/8W J	
R341	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R343	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R351	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R352	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R353	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R361	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R362	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R363	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R371	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R372	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R373	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R401	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R402	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R403	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R404	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R407	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R408	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R701	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R702	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R703	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R705	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R708	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J	
R725	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J	
R733	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R734	NRS181J-471X	MG RESISTOR	470Ω 1/8W J	
R735	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R736	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R791	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R792	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R793	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R794	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R795	NRS181J-150X	MG RESISTOR	15Ω 1/8W J	
R796	NRS181J-150X	MG RESISTOR	15Ω 1/8W J	
R797	NRS181J-100X	MG RESISTOR	10Ω 1/8W J	
R798	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R801	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R802	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R803	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R804	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R805	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R806	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R808	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R811	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R812	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R813	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R815	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R816	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R817	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R822	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R825	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R826	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R827	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R828	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R829	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R830	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R832	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R834	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R836	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R838	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R840	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R842	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R844	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R845	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R846	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R861	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R862	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R901	NRSA63J-912X	MG RESISTOR	9.1kΩ 1/16W J	
R902	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R903	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R904	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R905	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R906	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R907	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J	
R908	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J	
R909	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R910	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R911	NRS181J-473X	MG RESISTOR	47kΩ 1/8W J	
R912	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R913	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R914	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R931	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R966	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R967	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R973	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R975	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R5501	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R5502	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R5503	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R5504	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R5505	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
L701	QQL231K-4R7Y	COIL	4.7uH K	
L801	QQL231K-4R7Y	COIL	4.7uH K	
L901	QQR0703-001	CHOKE COIL		
L5501	QQL231K-4R7Y	COIL	4.7uH K	
CJ341	QNN0489-001	SURROUND JACK		
CJ701	QNB0100-002	CAR ANT JACK		
CJ702	QGA2006C1-02	CONNECTOR	W-B (1-2)	
CN501	QGB2027M4-22S	CONNECTOR	B-B (1-22)	
CN801	QGZ1601J1-15	CONNECTOR	(1-15)	
CN901	QNZ0002-001	16P CONNECTOR		

⚠ Symbol No.	Part No.	Part Name	Description	Local
K5308	NQR0007-002X	FERRITE BEADS		
LF501	QQR0797-002	COIL		
PP1	QZW0010-001	STYLE PIN		
PP2	QZW0010-001	STYLE PIN		
PP3	QZW0010-001	STYLE PIN		
TU701	QAU0281-001	TUNER PACK		
X801	QAX0406-001Z	CRYSTAL	4.500MHz	

Front board

Block No. [0][2][0][0]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC601	PT6523LQ	IC		
IC602	RPM6938-V4	IC		
D601	SML-310VT/JK/-X	LED		
D602	SML-310VT/JK/-X	LED		
D603	SML-310VT/JK/-X	LED		
D604	SML-310VT/JK/-X	LED		
D605	SML-310VT/JK/-X	LED		
D606	SML-310VT/JK/-X	LED		
D607	SML-310VT/JK/-X	LED		
D608	SML-310VT/JK/-X	LED		
D609	SML-310VT/JK/-X	LED		
D610	SML-310VT/JK/-X	LED		
D611	SML-310VT/JK/-X	LED		
D612	SML-310VT/JK/-X	LED		
D613	SML-310VT/JK/-X	LED		
D614	SML-310VT/JK/-X	LED		
D615	SML-310VT/JK/-X	LED		
D616	SML-310VT/JK/-X	LED		
D617	SML-310VT/JK/-X	LED		
D618	SML-310VT/JK/-X	LED		
D619	SML-310VT/JK/-X	LED		
D620	SML-310VT/JK/-X	LED		
D621	SML-310VT/JK/-X	LED		
D622	SML-310LT/MN/-X	LED		
D641	UDZS5.1B-X	Z DIODE		
D642	1SS355-X	SI DIODE		
D644	UDZS5.1B-X	Z DIODE		
D645	UDZS6.2B-X	Z DIODE		
D731	NSPW310BS/BRS/	LED		
D732	NSPW310BS/BRS/	LED		
C601	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C602	NCB31HK-681X	C CAPACITOR	680pF 50V K	
C603	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C611	NCB31HK-123X	C CAPACITOR	0.012uF 50V K	
C612	NBE20JM-475X	TA E CAPACITOR	4.7uF 6.3V M	
C613	NCB31HK-153X	C CAPACITOR	0.015uF 50V K	
C614	NCB31HK-153X	C CAPACITOR	0.015uF 50V K	
R601	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R602	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R603	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R604	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R605	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R606	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R607	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R608	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R609	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R610	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R612	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R613	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R614	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R615	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R616	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R631	NRSA02J-821X	MG RESISTOR	820Ω 1/10W J	
R632	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R633	NRSA02J-122X	MG RESISTOR	1.2kΩ 1/10W J	
R634	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R635	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R636	NRSA02J-821X	MG RESISTOR	820Ω 1/10W J	
R637	NRSA02J-821X	MG RESISTOR	820Ω 1/10W J	
R638	NRSA02J-391X	MG RESISTOR	390Ω 1/10W J	
R639	NRSA02J-391X	MG RESISTOR	390Ω 1/10W J	
R640	NRSA02J-681X	MG RESISTOR	680Ω 1/10W J	
R641	NRSA02J-681X	MG RESISTOR	680Ω 1/10W J	
R642	NRSA02J-681X	MG RESISTOR	680Ω 1/10W J	
R643	NRSA02J-681X	MG RESISTOR	680Ω 1/10W J	
R644	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R645	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R646	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R647	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R651	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R653	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R654	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R655	NRS181J-103X	MG RESISTOR	10kΩ 1/8W J	
R656	NRS181J-103X	MG RESISTOR	10kΩ 1/8W J	
R657	NRSA63J-513X	MG RESISTOR	51kΩ 1/16W J	
R658	NRSA63J-184X	MG RESISTOR	180kΩ 1/16W J	
R659	NRS181J-431X	MG RESISTOR	430Ω 1/8W J	
R660	NRS181J-431X	MG RESISTOR	430Ω 1/8W J	
R662	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R670	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W J	
R671	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R672	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R673	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R674	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
CJ601	QGZ1601K1-15S	CONNECTOR	(1-15)	
JS690	QSW0793-001	ROTARY ENCODER		
S601	NSW0124-001X	TACT SW		
S602	NSW0124-001X	TACT SW		
S603	NSW0124-001X	TACT SW		
S604	NSW0124-001X	TACT SW		
S605	NSW0124-001X	TACT SW		
S606	NSW0124-001X	TACT SW		
S607	NSW0124-001X	TACT SW		
S608	NSW0124-001X	TACT SW		
S609	NSW0124-001X	TACT SW		
S610	NSW0124-001X	TACT SW		
S611	NSW0124-001X	TACT SW		
S612	NSW0124-001X	TACT SW		
S613	NSW0124-001X	TACT SW		
S614	NSW0124-001X	TACT SW		
S615	NSW0124-001X	TACT SW		
S616	NSW0124-001X	TACT SW		
S617	NSW0124-001X	TACT SW		
S618	NSW0124-001X	TACT SW		

Sub board

Block No. [0][3][0][0]

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC101	ES3880FM	IC		
IC102	AT27C020-70JCU5	IC		
IC103	GLT44016-35J4-X	IC	4M DRAM	
IC104	ES3883F	IC		
IC105	RT9161/A-27CG-X	IC		
IC106	TC7S08F-W	IC		
IC107	TC7W08FU-X	IC		
IC108	MM1565AF-X	IC	5.0V Regulator	
IC151	NJM4565V-X	IC		
IC251	MN101C30ACK1	IC		
IC261	MM1565AF-X	IC	5.0V Regulator	
IC501	LA6589H-X	BTL DRIVER IC		
IC601	AN22000A-W	IC		
IC651	MN6627482WA	IC		
Q631	2SA1037AK/RS/-X	TRANSISTOR		
D603	1SS355-X	SI DIODE		
C002	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C101	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C102	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C103	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C104	NEA71CM-106X	E CAPACITOR	10uF 16V M	
C105	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C106	NEA71CM-106X	E CAPACITOR	10uF 16V M	
C107	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C109	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C110	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C111	NCS31HJ-471X	C CAPACITOR	470pF 50V J	
C112	NCS31HJ-471X	C CAPACITOR	470pF 50V J	
C113	NCS31HJ-220X	C CAPACITOR	22pF 50V J	
C114	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C115	NCS31HJ-220X	C CAPACITOR	22pF 50V J	
C116	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C117	NEA70JM-476X	E CAPACITOR	47uF 6.3V M	
C118	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C120	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C121	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C122	NEA71CM-107X	E CAPACITOR	100uF 16V M	
C123	NEA70JM-476X	E CAPACITOR	47uF 6.3V M	
C124	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C125	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C126	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C127	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C128	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C129	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C130	NEA71CM-107X	E CAPACITOR	100uF 16V M	
C131	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C132	NEA71CM-107X	E CAPACITOR	100uF 16V M	
C133	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C134	NEA71CM-106X	E CAPACITOR	10uF 16V M	
C135	NEA70JM-476X	E CAPACITOR	47uF 6.3V M	
C136	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z	
C137	NCB31CK-103X	C CAPACITOR	0.01uF 16V K	
C138	NEA71CM-107X	E CAPACITOR	100uF 16V M	
C140	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C141	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C144	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C145	NCB21AK-225X	C CAPACITOR	2.2uF 10V K	
C146	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C147	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C151	NEAD1CM-476X	E CAPACITOR	47uF 16V M	
C161	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C162	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C163	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C164	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C255	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C261	NCB21AK-225X	C CAPACITOR	2.2uF 10V K	
C262	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C263	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C271	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C272	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C273	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C291	NEA71CM-476X	E CAPACITOR	47uF 16V M	
C501	NCB31CK-103X	C CAPACITOR	0.01uF 16V K	
C503	NEA70JM-476X	E CAPACITOR	47uF 6.3V M	
C542	NCB31CK-563X	C CAPACITOR	0.056uF 16V K	
C543	NCB31EK-123X	C CAPACITOR	0.012uF 25V K	
C544	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C545	NEN51CM-475X	BP E CAPACITOR	4.7uF 16V M	
C601	NCB31CK-333X	C CAPACITOR	0.033uF 16V K	
C602	NCB31CK-333X	C CAPACITOR	0.033uF 16V K	
C603	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	
C604	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	
C605	NDC31HJ-271X	C CAPACITOR	270pF 50V J	
C606	NDC31HJ-680X	C CAPACITOR	68pF 50V J	
C609	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C610	NCB31CK-563X	C CAPACITOR	0.056uF 16V K	
C611	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C612	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C614	NCB31CK-393X	C CAPACITOR	0.039uF 16V K	
C615	NCB31HK-272X	C CAPACITOR	2700pF 50V K	
C616	NCB31HK-272X	C CAPACITOR	2700pF 50V K	
C621	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C622	NEA70JM-107X	E CAPACITOR	100uF 6.3V M	
C623	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C624	NEA70JM-107X	E CAPACITOR	100uF 6.3V M	
C631	NEA71CM-106X	E CAPACITOR	10uF 16V M	
C632	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C641	NCB31EK-823X	C CAPACITOR	0.082uF 25V K	
C642	NCB31EK-823X	C CAPACITOR	0.082uF 25V K	
C651	NDC31HJ-100X	C CAPACITOR	10pF 50V J	
C652	NDC31HJ-100X	C CAPACITOR	10pF 50V J	
C653	NCB31AK-334X	C CAPACITOR	0.33uF 10V K	
C655	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C656	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C657	NEA70JM-107X	E CAPACITOR	100uF 6.3V M	
C659	NDC31HJ-151X	C CAPACITOR	150pF 50V J	
C661	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C663	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	
C664	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C665	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C669	NCS31HJ-101X	C CAPACITOR	100pF 50V J	
C671	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C672	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C676	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C679	NEA70JM-107X	E CAPACITOR	100uF 6.3V M	
C680	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C681	NDC31HJ-680X	C CAPACITOR	68pF 50V J	
C811	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C812	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C813	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
C814	NCB31EK-473X	C CAPACITOR	0.047uF 25V K	
R101	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R102	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R103	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R104	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R105	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R106	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R107	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R108	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R109	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R111	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R112	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R113	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R119	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R120	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R121	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R128	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J	
R130	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J	
R132	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R133	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R134	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R135	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R136	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R137	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R138	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R139	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J	
R140	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R142	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R145	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R146	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R147	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R148	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R151	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R152	NRSA02J-100X	MG RESISTOR	10Ω 1/10W J	
R154	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R161	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R162	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R163	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
R164	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
R165	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
R166	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
R167	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R168	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R169	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R170	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R251	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R252	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R253	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R254	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R255	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R257	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R258	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R259	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	

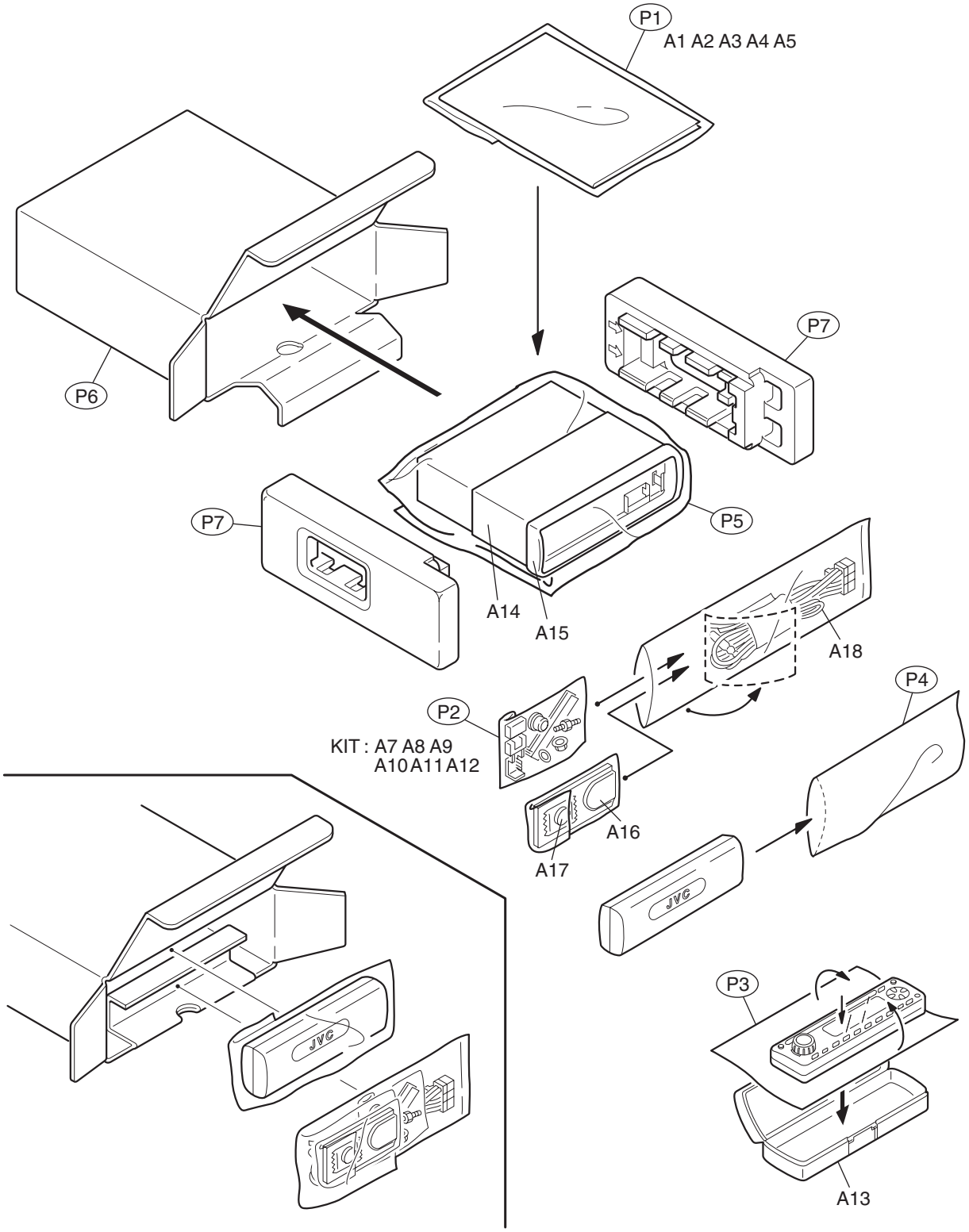
⚠ Symbol No.	Part No.	Part Name	Description	Local
R263	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R264	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R273	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R274	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R275	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R276	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R277	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R278	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R279	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R285	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R541	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
R542	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R543	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R544	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
R545	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
R546	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R547	NRSA63J-274X	MG RESISTOR	270kΩ 1/16W J	
R548	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R550	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R551	NRSA63J-202X	MG RESISTOR	2kΩ 1/16W J	
R552	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
R553	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R554	NRSA63J-513X	MG RESISTOR	51kΩ 1/16W J	
R557	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J	
R558	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
R596	NRSA02J-822X	MG RESISTOR	8.2kΩ 1/10W J	
R601	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J	
R602	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J	
R603	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J	
R604	NRSA63J-274X	MG RESISTOR	270kΩ 1/16W J	
R605	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R607	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R608	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R611	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R613	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R617	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R631	NRSA63J-2R2X	MG RESISTOR	2.2Ω 1/16W J	
R632	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R634	NRSA63J-120X	MG RESISTOR	12Ω 1/16W J	
R635	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R641	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J	
R642	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R648	NRSA63J-623X	MG RESISTOR	62kΩ 1/16W J	
R649	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J	
R651	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R652	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R653	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R654	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R655	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R656	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R657	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R658	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R662	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R663	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J	
R664	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R665	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R667	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
R669	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R670	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R673	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R675	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R682	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R683	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J	
R689	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R691	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R692	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R693	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R694	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
L101	NQL011K-3R3X	COIL	3.3uH K	
L102	NQL011K-3R3X	COIL	3.3uH K	
CN501	QGB2027L1-22X	CONNECTOR	B-B (1-22)	
CN601	QGF0527F2-22W	CONNECTOR	FFC/FPC (1-22)	
K655	NQR0007-002X	FERRITE BEADS		
K656	NQR0251-004X	FERRITE BEADS		
K657	NQR0251-004X	FERRITE BEADS		
K658	NQR0251-004X	FERRITE BEADS		

⚠ Symbol No.	Part No.	Part Name	Description	Local
X101	NAX0550-001X	CRYSTAL	27.000MHz	
X251	NAX0248-001X	C OSCILLATOR		
X651	NAX0375-001X	CRYSTAL	16.9344MHz	

<MEMO>

Packing materials and accessories parts list

Block No. M 3 M M



Packing and accessories

Block No. [M][3][M][M]

⚠ Symbol No.	Part No.	Part Name	Description	Local
A 1	LVT1003-001B	INST BOOK	ENG ARA CHI THA	
A 2	LVT1003-002B	INST BOOK	KOR	
A 3	LVT1003-003A	INSTALL MANUAL	ENG ARA CHI THA	
A 4	LVT1003-004A	INSTALL MANUAL	KOR	
A 5	LVT0918-002B	MP3 SHEET		
A 7	VKZ4027-202	PLUG NUT		
A 8	VKH4871-001SS	MOUNT BOLT		
A 9	VKZ4328-001	LOCK NUT		
A 10	WNS5000Z	WASHER		
A 11	GE40130-001A	HOOK	(x2)	
A 12	LV41478-002A	CORD CONNECTOR		
A 13	FSJB3002-00C	HARD CASE		
A 14	GE20137-003A	MOUNTING SLEEVE		
A 15	GE20135-003A	TRIM PLATE		
A 16	RM-RK110	REMOCON		
A 17	----------	BATTERY		
A 18	QAM0462-001	CAR CABLE		
KIT	SRW-3000U	SCREW PARTS KIT	A7 to A12	
P 1	FSPG4002-001	POLY BAG		
P 2	QPA00801205	POLY BAG	8cm x 12cm	
P 3	FSYH4036-068	SHEET		
P 4	QPA01003003	POLY BAG	10cm x 30cm	
P 5	QPC03004315P	POLY BAG	30cm x 43cm	
P 6	LV34199-001A	CARTON		
P 7	GE10047-001A	EPS CUSHION	(x2)	